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Original Articles.

A FURTHER REPORT ON PERMANENT CATHETERIZATION.*

J. RILUS EASTMAN, M.D.

INDIANAPOLIS, IND.

Permanent catheterization in the male has been practiced by the writer in fifteen cases. In each case the catheter was retained for more than ten days, and in two instances for more than sixty days. These cases embraced a variety of conditions demanding bladder drainage, and in all but one entirely satisfactory results were obtained.

The fifteen cases included six perineal operations for stricture of the posterior urethra—one of which involved resection of nearly all of the pars membranacea—two operations for the closure of the perineal urethral fistulæ, two cases of perineal lithotomy, two cases of severe cystitis complicating prostatic hypertrophy, a case in which the catheter was introduced to drain and give physiologic rest to the bladder for the relief of atony and incontinence following stricture of the pars anterior, a plastic operation for the cure of a vesicorectal fistula, and another for the closure of an old unhealed suprapubic cystotomy wound.

An experience of fifteen cases is hardly extensive enough to justify the drawing of general deductions. The writer therefore submits the following points as mere impressions in the hope that a larger experience will establish their accuracy.

The mechanical urethritis occasioned by the presence of the catheter was in all cases insignificant. There was no complaint of urethral pain, and the discharge from the urethral mucosa was never annoying, usually just enough secretion of tough fibrino-muco-purulent character, accumulating during 24 hours, to form a thin ring upon the catheter at the meatus. The decidedly benign urethritis invariably became less active after the catheter had been in position for a few days. In two cases the catheter was retained without changing for two months, and in these, during the latter weeks, the discharge became practically nil. These facts suggest that the urethral mucosa develops a tolerance for the instrument after suffering its presence for a few days. In a few of the cases cited during the first few days permanganate of potassium in hot weak solution was injected between the catheter and the mucosa, but even when this measure was omitted the urethritis was slight. The catheters used were of soft rubber with two eyes. Large sizes were chosen for the reason that such catheters as completely fill the lumen of the urethra occasion less frictional irritation than smaller ones, which readily slide and twist in the canal. If a small instrument is used urine may escape freely from the perineal wound or find its way to the meatus between the catheter and mucosa. Prompt closure of the perineal wound and convalescence may be thus retarded. The penis will often by bending and writhing disgorge a small limber instrument, whereas a large catheter, because of its greater stiffness, is much more easily retained. The presence of the large catheter in the bladder-neck seemed to relieve irritability in this region. Severe muscular spasm or tenesmus never occurred during its use by the writer. Dilatation of the anal sphincters relieves irritability. Why, therefore, should not dilatation of the vesical sphincter produce a somewhat similar result? The catheters used varied in size from 26 to 29—Charrière scale.

The presence of a properly applied retention catheter should not produce cystitis. It has been stated that inflammation of the bladder may occur during permanent catheterization as the result of direct extension of an urethritis or from decomposition of the small quantity of urine which always moistens the intravesical end of the catheter. If cystitis was produced in either manner in the writer's cases it was not severe enough to occasion symptoms. Permanganate of potassium solution or a solution of hydrogen peroxid were occasionally introduced into the bladder, chiefly, however, for the purpose of eliciting assurance that the catheter was freely open. Regular flushing of the bladder was not practiced except in the two cases of cystitis complicating prostatic hypertrophy. Boracic acid in solution proved undesirable for irrigation in these cases, as its crystallization in the long-retained catheters partially obstructed the lumen. In the cases of cystitis pain and strangury were distinctly relieved by permanent catheterization. Guyon and Michon used the retained catheter in a large number of cases of cystitis attending prostatic hypertrophy, and in 77 per cent. a cure is said to have been obtained. It is essential to success in the treatment of cystitis that the catheter be introduced just far enough so that the tip bearing the eyes projects within the bladder and is accurately secured in this position. Pain and strangury suggest that the catheter has been introduced too far. The lumen of the catheter should be large enough to drain the urine from the bladder as fast as it enters from the kidneys.

It was noted that the pressure absorption produced by the continuous presence of the large soft rubber catheter was such as to remove extensive soft and hard infiltrations. After two weeks' retention of the catheter it was often easily possible to pass steel sounds several sizes larger than the catheter itself.

It is reported that occasionally during permanent catheterization with a metallic instrument abscesses develop in the peri-urethral tissues at the scrotal angle.

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: Drs. W. J. Mayo, H. O. Walker, and A. J. Ochsner.

These have possibly been due to pressure exercised by the hard catheter. At any rate, no such complication has occurred within the writer's knowledge from the

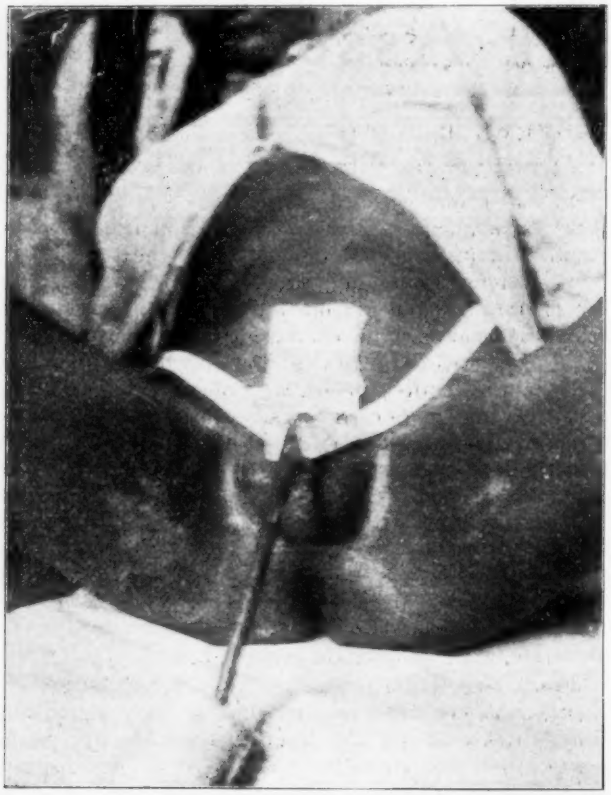


Fig. 1.—Retained catheter, secured by two transfixing safety pins and two adhesive straps.

Fig. 2.—Reinforcing straps.

continued pressure of a soft rubber drainage catheter.

It has been urged that continued use of the retained catheter will conduce to atony of the bladder. This is certainly not a valid argument against its use in properly selected cases. If it puts at rest the bladder muscularis, perineal and suprapubic openings do likewise. Fuller, with others, has shown that rest in many cases of vesical atony, particularly those cases resulting from stricture, is a sovereign agent in treatment.

There are many good reasons why permanent catheterization should be selected as the method of choice for routine use in selected cases in draining the urinary bladder. Among these the following may be enumerated:

1. By its use the urine is removed by the natural exit.

2. If used after operations involving opening of the posterior urethra until the perineal defect is closed, the period of convalescence is shortened since the perineal wound closes promptly if the urine be drained through the urethra.

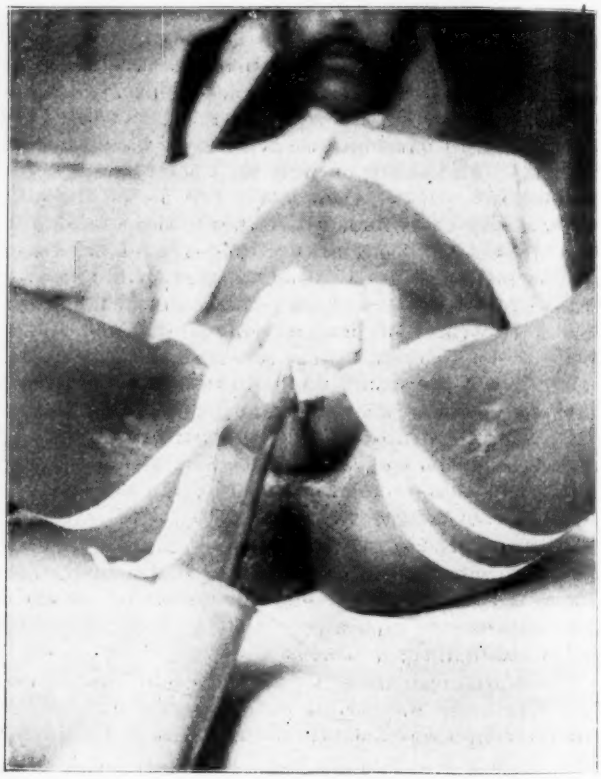


Fig. 3.—Transverse strap to hold the penis down.

3. The caliber of the urethra is maintained or even increased, and the subsequent passage of instruments is rendered easy.

4. Much of the tedious work of after-treatment, as sounding, becomes unnecessary or is decidedly lessened.

5. After perineal section involving removal of a portion of the posterior urethra, intermittent catheterization or sounding is exceedingly harmful and difficult of execution; hence, maintenance of the urethral lumen becomes a serious task. If, however, the retained catheter is used, sounding becomes unnecessary and the new segment of urethra has a guide over which to form itself.

6. The urine may be thus accurately drained into a receptacle, and bedsores, dermatitis and much discomfort are avoided.

7. The danger of uremic poisoning is reduced, since the area of the unprotected tissue with which the urine must come in contact is diminished. For the same

reason the danger of bacterial infection or intoxication is lessened.

8. Pain and fever are notably slight during permanent catheterization, if care be exercised that the instrument does not project too far into the bladder.

9. Soft and hard infiltrations which may narrow the caliber of the urethra are removed by the pressure absorption produced by the presence of the catheter.

10. Drainage of the bladder in cystitis may be accomplished by this method without subjecting the patient to a more or less dangerous surgical operation, as must be done when suprapubic or perineal drainage is employed; here also the possibility of delayed non-closing of the wound enters into the consideration. The catheter may often be introduced in such cases with as little pain and inconvenience as accompanies the introduction of Skene's catheter for permanent catheterization in the female.

A convenient method of retaining the catheter is as follows: After the introduction of the instrument it is transfixed with two safety pins just in front of the external meatus. To each of these pins is fastened a narrow strap of adhesive plaster with the glue side toward the penis. These straps fall naturally along the course of Poupart's ligaments and around the sides. They may, if necessary, be reinforced by two other straps, which should pass downward along the outer edge of each abdominal rectus muscle, crossing the first two near the sides of the root of the penis, and continuing downward between the thighs to the buttocks. If the penis turns upward it may be easily held down by an additional strap passed transversely over its dorsum, the ends of this strap being fastened to the skin of the buttocks or the posterior aspect of the thighs.

FALLACIES IN THE TREATMENT OF URETHRAL DISEASES.*

ROBERT HOLMES GREENE, A.M., M.D.

Attending Surgeon to Workhouse Hospital, New York City; Attending Genito-Urinary Surgeon to French Hospital.

NEW YORK CITY.

Looking backward over the history of the treatment of the diseases of the urethra, if one is impressed with the slight amount of real progress that has been made, there is less cause for surprise if the fact is taken into consideration that our knowledge of the nature itself of these diseases, certainly until the last fifteen years, has been very slight. Known in ancient days to be an entity by itself, urethritis came to be considered as another manifestation of syphilis from early in the sixteenth until the middle of the last century. Neisser's discovery of the gonococcus in 1879, and particularly the discoveries of Pasteur, Metchnikoff and others as to the nature of infecting diseases and the way the body reacts against them, have acted as guideposts, showing the way towards their proper treatment, although the information from this source as regards their treatment through a misrepresentation of the above-mentioned discoveries has sometimes proved misleading. One general law as regards treatment of the urethra that can easily be interpreted from the discoveries made by these later observers is, that measures tending toward the destruction of an invading organism in one portion of the body should be destructive towards organs invading any other portion of the system; the influences of such measures being modified by the character of the organism and the portion of the body attacked. Apparently some of the recent exploiters of rapid cures of urethritis have not taken this into account. If, however, an overwhelming mass of clinical observation show their measures to be correct, then it must be that our interpretations of Nature's laws are wrong, and upon the pathologists rests the duty of modifying their present explanation of Nature's phenomena. Thus the pus of urethritis is often considered in recent times to be the disease itself instead of a mere symptom of the conflict going on between the forces of the body and the invading microbe, and an effort of Nature to destroy, by means of the bactericidal serum, the invading organism, and to sweep them and the results of the conflict between them and the portions of the body away by its flow. Then again, some fifteen or twenty years ago, the so-called strictures of large caliber of the pendulous urethra were held accountable for many of the inflammatory affections of that membrane, and their incision recommended as a method of treatment. Operations for these running up into the hundreds in number were not infrequently reported. Two factors have probably caused these operations to fall into disuse: Clinical experience not having demonstrated from such measures the good clinical results that might theoretically have been expected, and the possession at the present time of a more definite knowledge as to what stricture really is. Roughly speaking, true organic stricture of the urethra is cicatricial tissue formed at the base of a granuloma in the urethra due to a change in the position in the normal cells from a horizontal to a vertical plane and their gradual lengthening. The granuloma is an infiltration of the round-cell type around and under the base of an ulceration or a dipping down of this infiltration in the urethral follicles, which ar much more numerous than has been generally considered the case; the dipping down of the ulceration being after-results of acute inflammatory diseases of the urethra. This cicatricial tissue may be, of course, much more quickly formed by external injury or careless instrumentation. If strictures as a routine matter are being incised at the present time less generally than a few years past, it is to be looked upon with commendation; for undoubtedly in the past, many cases of the above-mentioned granuloma which may cause swellings in the urethra have been mistaken for true stricture and unnecessarily incised. It can be stated as a fact that the chronic inflammatory conditions following urethritis in the urethra, both anterior and posterior, and in the

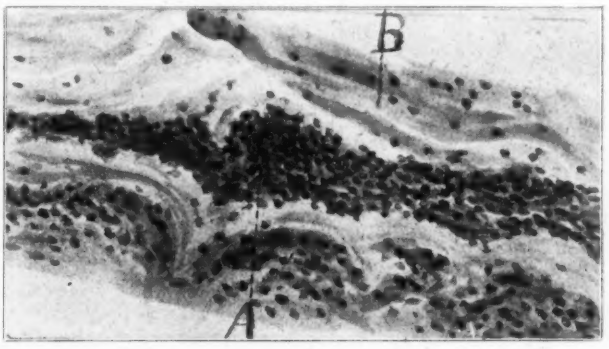


Fig 1.—Case 5, showing connective tissue hyperplasia about an acinus which has become filled with an inflammatory exudate. Section taken from the peripheral portion of an enlarged gland removed by operation. *a*, Inflammatory exudate of small round cells; *b*, hyperplastic connective tissue fibrils. This represents the acute infiltration of the acini, similar to what is seen in prostatitis associated with urethritis.

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: Drs. W. J. Mayo, H. O. Walker and A. J. Ochsner.

prostate, proceed in a slow method. The writer's experience has been that outside of the traumatic cases above mentioned, strictures of such resiliency following urethritis as to require a cutting operation are almost never met with, certainly not in men under 40 years of age. To be sure, in hospital practice he has, like all surgeons, found a series of cases with a mass of cicatricial tissue in the deeper portions of the urethra of such resiliency as to require incision in order to give the urethra a proper caliber, but these have been cases that have given the history of antecedent operative procedures that were apparently unnecessary, and the patients have been men who have been careless of their well-being and have not attended to measures necessary to keep their urethras properly dilated.

The discovery of the gonococcus apparently suggested to its first advocate the so-called irrigation method of treatment for acute urethritis, the disease being considered at this time as being generally confined to the anterior urethra alone. Within the past few years it has been demonstrated as the result of observations made by several men, of whom the writer is one, that urethritis not rarely but generally invades the deep urethra and prostate and not the anterior urethra alone. These dis-

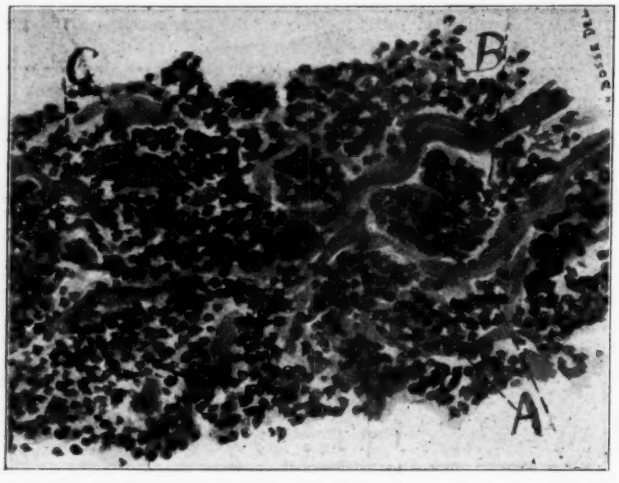


Fig. 2.—Case 30, showing an extreme small round cell infiltration in the immediate neighborhood of the posterior urethra. The central portions of this gland showed a great interstitial hyperplasia with the cell infiltration becoming more and more marked until the area pictured was reached. *a*, Small round cells; *b*, acini filled by exudate; *c*, stroma, largely obscured by the cell infiltration. This represents a later stage of same condition as shown in Fig. 1, where the acute process still continues.

coveries as to the nature of urethritis have had an important bearing upon the treatment of urethritis in two particulars. It has obliged those who believe in the irrigation treatment of acute urethritis to recommend the extension of irrigations to the deep urethra and bladder, in order to be logical. It renders illogical at once the position adopted by the earlier advocates of the irrigation method who recommended the irrigation method for the anterior alone, and illogical as well, the position of those who still advocate the use of injections to the use of anterior urethra alone by the patient, and illogical also the position of those who recommend the use of recurrent irrigations from the bulbus urethræ out. The above refers, of course, to acute urethritis and is not meant to refer to the local treatment of some chronic lesion remaining after acute inflammatory processes have subsided. The believers in irrigation methods of treatment of acute urethritis received a powerful recruit a few years past in the person of Dr. Janet, whose method of irrigation by permanganate of potash has had so many followers in this country. Theoretically, the advocates of these methods are, according to the laws of modern pathology, in error, their idea apparently being either that the gonococcus can be killed by direct administration to it of some substance inimical to its existence, or that the soil may be rendered unsalubrious for it to breed upon, or that the substance injected being kept continually present on the urethral wall, when the gonococcus emerges from the deeper layer of the urethra, it is there to put an end to its career; or, as one of the advocates of recurrent irrigations suggests, the gonococcus can be knocked off the walls of the urethra and washed out at the same time.

The above seems to be the sum total of the theoretical explanation of the good results which advocates of the early irrigation treatment of urethritis claim to obtain; for all evidence as to the presence or absence of the gonococcus obtained from staining methods alone is of comparatively little scientific value, unless the results are confirmed by cultures. Eight years ago the writer claimed that local treatment for urethritis should not be commenced until the acute symptoms had subsided; that is, from six to eight weeks after the onset of the disease. His belief, at that time, was founded on clinical experience and conformed to the pathological

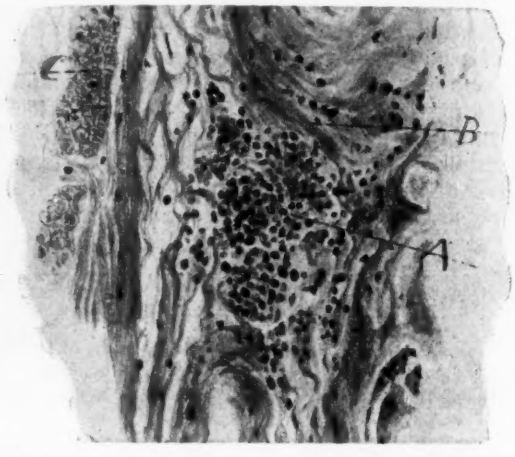


Fig. 3.—Case 1, showing moderate round-cell infiltration, with marked interstitial increase. Taken from central portion of gland Tissue removed by operation. *a*, Patch of round-cell infiltration; *b*, hyperplastic connective tissue; *c*, normal smooth muscle fibers transverse section. This represents condition as shown in Fig 1, where the process has become chronic, the muscular fibers surrounding the acini are being replaced by connective tissue fibrils.

laws as at that time understood. Recent discoveries in pathology and his further experience in dispensary and hospital work have tended to render them more positive. The list of genito-urinary surgeons who hold the same belief comprises many prominent men and seems to be increasing in size. Such wonderful results, though, are claimed to be shown by clinical experience by the advocates of irrigation methods in the early stages of urethritis, that their claims must be considered seriously, although their views are not apparently in conformity with pathological laws, nor is the evidence furnished by them as to the presence or absence of the gonococcus by microscopical examinations of the secretions alone, of scientific value. It seems there must be some fire where there is so much smoke. It tends to discredit somewhat, to an unbiased mind, belief in the views of those who claim that acute urethritis is an ephemeral disease capable of being cured in a very few days by any process of irrigations, to find that the advocates of such irrigations differ so widely as to the proper material to be used for

their solution. The list of such substances is only partially filled by the mention of permanganate of potassium, mercurial, ichthyol, etc., ad infinitum.

There is some evidence which goes to show that they render the patient more comfortable by these methods; that a purulent discharge is more quickly changed into a muco-purulent one; and that the gonococcus sooner disappears from the surface of the urethra. The writer is of the opinion, however, based on his clinical experience as well as on any theoretical pathological knowledge of the disease that he may have, that by these methods the gonococcus or whatever form of microbe may be causing the inflammation, instead of being allowed to have its battle with the forces which the body marshals to said microbe's destruction, is driven into the deeper portions of the urethra and the prostatic follicles. By the use of these methods the tendency to what is termed latent urethritis, that is, the recurrence of urethritis without reinfection even years after the original invasion of the disease—a condition which is recognized by all observers on this subject—is increased. The observations of many people extending over a long

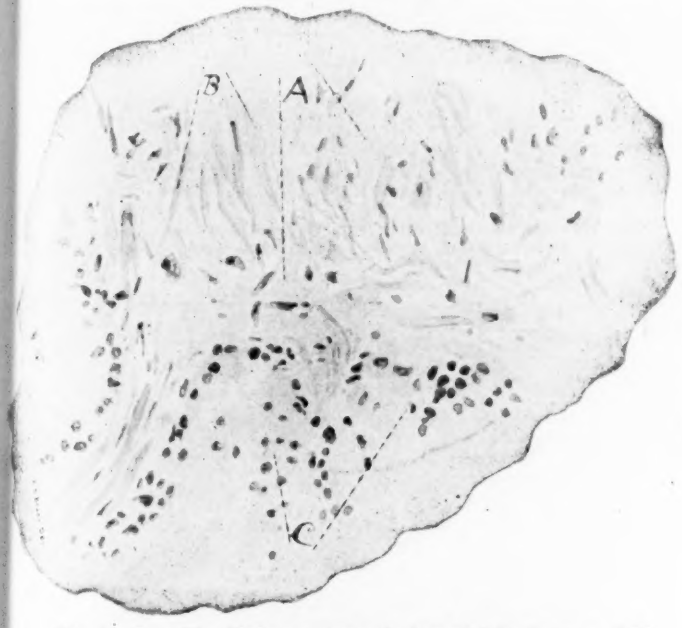


Fig. 4.—Case 28. Moderate prostatic hypertrophy in man of 53 years. Showing increase in interstitium, separation of muscle fibers and proliferation of the epithelial cells of acini, some of which are completely filled by these cells. *a*, Hyperplastic connective tissue; *b*, normal muscle fibers; *c*, proliferating epithelial cells, almost completely filling the acini. This represents a form in which the inflammatory process has caused a rapid proliferation of the epithelial cells of the acini and a production of connective tissue which has displaced the muscle cells to a considerable degree.

period of time will be necessary to entirely substantiate the value of the opinions held by those who believe in the postponing of local treatment for urethritis until after the acute stage has subsided. The frequency with which infection entering through the urethra breaks through the barriers set up by Nature, such as the bactericidal serum, the phagocytosis and the chemotactic action of the nuclei with the ptomain given off by the invading bacteria, should be closely studied; and fortunately, it is just now a subject which is occupying the attention more and more of the medical world. The frequency of the diseased condition of the female in the ovaries and oviduct, in the prostate and testicles in the male, in the bladder, ureters and kidneys in both sexes, blood infection which may or may not affect the heart, meningitis, conjuctivitis and certain other diseases of the eye that are due to infection from the urethra, should be ascertained with much more positiveness than our knowledge at the present time informs us. In the earlier part of this paper the writer stated that the treatment of urethritis should be based on our present knowledge of the character and extent of the disease. Urethritis being shown to generally extend to the urethra and prostate in the form of a granulomata in the urethra, later causing cicatricial tissue stricture, which rarely requires an operation by incision. Antecedent traumatism only generally through instrumentation or previous cutting operations, necessitates it in a man under 40. The best treatment of acute urethritis for the first six or eight weeks, at least, is to refrain from local measures; leave it alone, like an infected wound occurring at the bottom of a long narrow sinus of any other part of the body. The chronic urethritis should

Fig. 5.—Specimen removed at autopsy from an old man. History of chronic urethritis. Gland much enlarged. Large corpora amylacea in acini from which all epithelium has been removed. Increase of interstitium, atrophy of muscle. Areas of inflammatory infiltration. *a*, Corpora amylacea; *b*, areas of inflammatory exudate. This is one way in which the condition shown in Fig. 4 can terminate. Degeneration of the epithelial cells has caused the formation of large corpora amylacea, and the irritation of these has produced the surrounding inflammatory reaction.

be treated locally, carefully and for a long period of time. The irrigation method of treatment for acute urethritis is wrong; it increases apparently the prostatic infiltration and the danger of the recurrence of the inflammation from latent urethritis, although it may render the patient more comfortable, and more rapidly change the purulent inflammation in the muco-purulent one. It has been demonstrated that a chronic prostatitis following urethritis is an extremely common occurrence. Any observer, by carefully washing out the bladder in a case of acute urethritis, massaging the prostate and examining the few drops of secretion mi-

croscopically that the patient is able to pass immediately afterwards—although he will not in every case obtain secretion enough—will find that the secretions will contain substances which show an infiltration of the inflammation into the prostatic follicles. Dr. Gouley in his last book on genito-urinary diseases as a result of autopsies performed on those who had had chronic prostatitis following urethritis and who died of some intercurrent diseases, states that "a granulomatous inflammation was found dipping down in the prostatic follicles and tending to close up the mouths of the ducts." Apparently it is the same kind of granuloma as is associated with the granuloma found in the urethra which is the antecedent cause of stricture, and like all inflammations following urethritis of a slow grade of inflammation.

The writer, in a paper read before the American Association of Genito-Urinary Surgeons three years ago at West Point, showing the frequency of prostatitis in connection with urethritis and as the result of some clinical experience, expressed the opinion that urethritis was the cause of prostatic hypertrophy of the aged. He expressed his views later in a paper read before the Academy of Medicine in New York. During the last hundred years the list of the names of observers who have believed that urethritis was the main cause or one of the causes of prostatic hypertrophy of old age has become a long one, and space does not admit of their mention here. Autopsic evidence, however, seemed to be against it, for the enlarged prostate examined microscopically in sections was shown by scientific observers to be generally an adenoma, and not due to an increase in connective tissue growth as might have been expected. The small hard prostates, however, showed an increase in connective tissue growths. The books have also mentioned the prevalence of a prostate in which the growth consisted of an increase in muscular tissue. A few weeks ago the

Fig. 6.—Case 32. Greatly hypertrophied prostate removed by Dr. Lilienthal. Showing marked increase in the connective tissue elements *a*; epithelial cells partly filling acini *b*; and inflammatory exudate about acinus *c*. Another way in which the process shown in Fig. 4 can terminate. The final stage of this type results frequently in the "small, hard prostate."

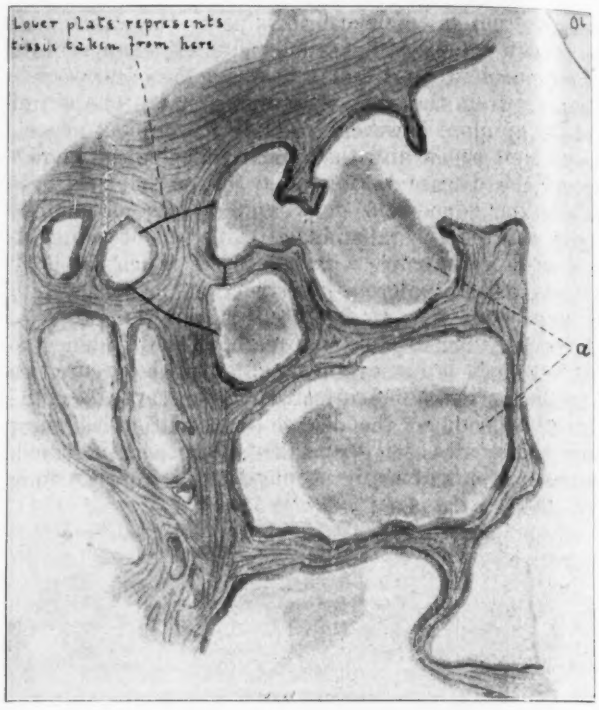


Fig. 7A.—Case 31. Greatly enlarged prostate removed by Dr. Guiteras. Outline sketch showing cystic acini, the so-called "cystic adenoma of the prostate."

Fig. 7B.—Section of wall between these acini, showing great decrease in the amount of muscle and hyperplasia of the connective tissue elements. *a*, Cystic acini, produced by obstruction of the ducts which have been produced by pressure of the inflammatory process about them; *b*, hyperplastic connective tissue fibrils, representing the chronic inflammation; *c*, atrophic muscle fibers, compressed by overgrowth of interstitium. This represents the same character as Fig. 6. That is, cystic distension of the acini instead of formation of large corpora amylacea as shown in Fig. 5. Enormous connective tissue increase surrounding acini and taking place of muscular fibers.

attention of the writer, through the kindness of Dr. B. Lapowsky, was called to an article written by Prof. Stanislaus Ciechanowski[1] on the anatomy of prostatic hypertrophy. Ciechanowski's researches have been most exhaustive in character, and after studying sections made from many diseased prostates he states as his opinion that the prostatic hypertrophy of the aged is an inflammatory disease; that if the original focus or the inflammation is towards the periphery of the prostate an increase in connective tissue will take place and give rise to the small hard prostate; if more central, that is, if the inflammation invades the mouths of the ducts, the larger and softer variety of enlarged prostate would be formed which resembles an adenoma and is easily mistaken for that. The prostate with an enlargement consisting mainly of muscular tissue, he failed to find in his investigations, nor was one found of this type in the investigations carried on at his suggestion by Dr. Brooks. Ciechanowski states that finding all the enlarged prostates examined by him to have an inflammatory origin, he thinks urethritis must be held accountable on account of its great frequency as a producer of inflammation in that region. The writer was so impressed with the conclusions of Ciechanowski that he requested Dr. Harlow Brooks, the eminent pathologist of the Bellevue and University Medical School, to carry on some investigations in the manner of Ciechanowski to see whether the latter's conclusions would be affirmed or disproved. Dr. Brooks kindly consented to do this work purely from a scientific interest which he took in the subject, and through his efforts and the writer's a large number of prostates in a comparatively short space of time were fortunately procured. The plates shown represent sections through some of the hypertrophied ones in this collection and it is hoped their study will illustrate the nature of the growth better than an exhaustive description. The writer here desires to express his thanks to Dr. J. P. McGowan of New York City for the use of a collection of nearly seventy prostates which Dr. McGowan had accumulated and on which some microscopic work had been done by Dr. Smith. Quite a number of the prostates in this collection were enlarged. Through the kindness of Dr. Charles Peck sections from six enlarged prostates, which had been removed and of which the histories could be obtained, were secured from the museum of the New York Hospital, and his thanks are likewise due to Dr. J. P. Tuttle, New York City, for a prostate removed at an autopsy, and to Dr. Howard Lilienthal and Dr. Ramon Guiteras for a prostate each had removed at an operation and concerning which the history of the patients could be obtained. Dr. Brooks was also enabled to obtain quite a number of prostates. In all nearly a hundred prostates were placed at the disposal of Dr. Brooks; of these thirty were enlarged, and of quite a large proportion of these latter the histories could be obtained. Dr. Brooks, to whom the writer feels the main credit for the outcome of these investigations belongs, reports as follows:

In accordance with your suggestions I have made a careful microscopic study of thirty specimens of hypertrophied prostate glands. The studies were made with special reference to the conclusions recently reached by Ciechanowski in his elaborate study of this condition.

The specimens studied by me comprised nearly every variety of enlarged prostate, including several of the so-called cystic adenomas, but excluding cases in which the enlargement was clearly of neoplastic origin, i. e., as carcinomata, etc.

In all of the specimens studied, inflammatory changes were clearly evident. The character of these lesions varied in the several cases from a chronic interstitial hyperplasia with more or less small round-cell infiltration, to actual suppuration and necrosis. In most of the specimens the inflammatory process noted was clearly of a vascular origin and in the acute cases could be traced in several instances direct to extension from the posterior urethra or from the ducts and acini of the prostate gland.

Apparently in most of the cases the hypertrophy was the direct result of the inflammatory changes, manifested in hyperplasia of the connective tissue, muscular atrophy and cell infiltration.

The study of these cases leads one to the conclusion that at least most forms of prostatic hypertrophy, including the so-called cystic adenoma, are of inflammatory origin and are in no way of the nature of new growths. The type of hypertrophy resulting depends on the location and character of the primary inflammatory process; as to these points I am in full accord with the opinions advanced by Ciechanowski.

One is not justified in drawing such sweeping conclusions from a study of so few cases as have been at our command in the brief period which has been allowed us, but taken in connection with the extensive studies just mentioned, I think we may look on this confirmatory evidence as almost conclusive.

I wish again to call your attention to the fact that at the outset I was not at all prepared to accept the decidedly radical conclusions of Ciechanowski, but careful study of the specimens which we have collected has won me to his view. Enclosed with this brief general report you will find a detailed report of my findings in each specimen.

It would not be claiming too much to conclude from these investigations that prostatic hypertrophy is an inflammatory enlargement and that urethritis, while perhaps not the only, is its most frequent causative agent. The question of urethritis in marriage, the question as to how extensive it is in its systemic effects, whether it is a simple ephemeral disease in the vast majority of cases capable of being quickly cured in a few days by the early administration of irrigations, as the believers in that form of treatment claim, or whether it is often a more deep-seated affair subject to the same pathologic law as allied diseases, as is believed by the writer, among others, are questions, the positive solution of which would be of great value to the medical profession and to the commonwealth. It is not from any one genito-urinary surgeon that a true answer to all these questions can be expected, but it can only be by the combined good scientific work of specialists in all diseases of general practitioners and pathologists that these problems can be solved.

In conclusion the writer can only reiterate what he has previously said, that we have, in his belief, in urethritis a disease often serious in character, far reaching in its results; apparently established by Nature or God, as you will, as a punishment for immorality; and is one among many of the signs which Nature presents, which tend to show that in domesticity and the proper fulfilling of the marriage vows, the laws of Nature and the moral law are closely allied.

1. Mittheilungen Aus den Grenzgebietten der Medizin und Chirurgie. Jena, 1900.

CLASSIFICATION OF MENTAL DISEASES.—The Italian neurologists and alienists in congress assembled at Ancona in October, adopted the following classification as best adapted for statistical purposes: 1, congenital psychoses; 2, acute and simple; 3, chronic, primary and consecutive; 4, paralytic; 5, accompanying a neurosis; 6, toxic, and 7, infectious.

NEW METHOD OF SKIAGRAPHIC DIAGNOSIS FOR RENAL AND URETERAL SURGERY.*

G. KOLISCHER, M.D., AND L. E. SCHMIDT, M.Sc., M.D.
CHICAGO.

Skiagraphy for medical purposes was especially advanced and perfected in America. Calculous deposits were especially attractive for *x*-ray diagnosis. McArthur, Bevan, Leonard and others four years ago showed the necessity of skiagraphs in all suspected cases of renal stone. Our method, now to be described, will perfect the knowledge of the topography of the kidney and ureter, the location of calculi and aid in important differential diagnoses. A conservative and plastic surgery of kidneys and ureters has lately made such progress and achieved such good results—we refer especially to Fenger and McArthur cases—that the absence of such diagnostic measures was the stimulus for our work. To a limited extent the different methods of collecting urine from each kidney and the cystoscopic observation of the ureteral openings has satisfied this desire. Skiagraphs frequently show the kidney-shaped shadow of the kidney while the representation of the ureters on the plate naturally failed on account of the delicate structures of these tubes. But, by the introduction of a suitable *x*-ray absorbing material into these organs with a simultaneous skiagraph, results of the highest value may be obtained and diagnostic problems solved that hitherto have been obscure. The technique is as follows: For locating the ureteral openings in the bladder and sounding the ureters in most of the cases we use Brenner's cystoscope; only in a few cases, where special peculiar conditions prevailed, we resorted to an improved modification of Casper's cystoscope.

Extensive cadaver work convinced us that the most desirable material for the sounds is lead, blended with some antimony. This kind of lead-wire is extremely flexible, so that the natural course of ureters would not be changed by introducing the sound. These sounds are soft and their surface polished up to perfect smoothness, so that injuries to the lining of the renal pelvis and of the ureter are not to be expected, and, in fact, are not to be observed, as careful examination in cadavers has proven.

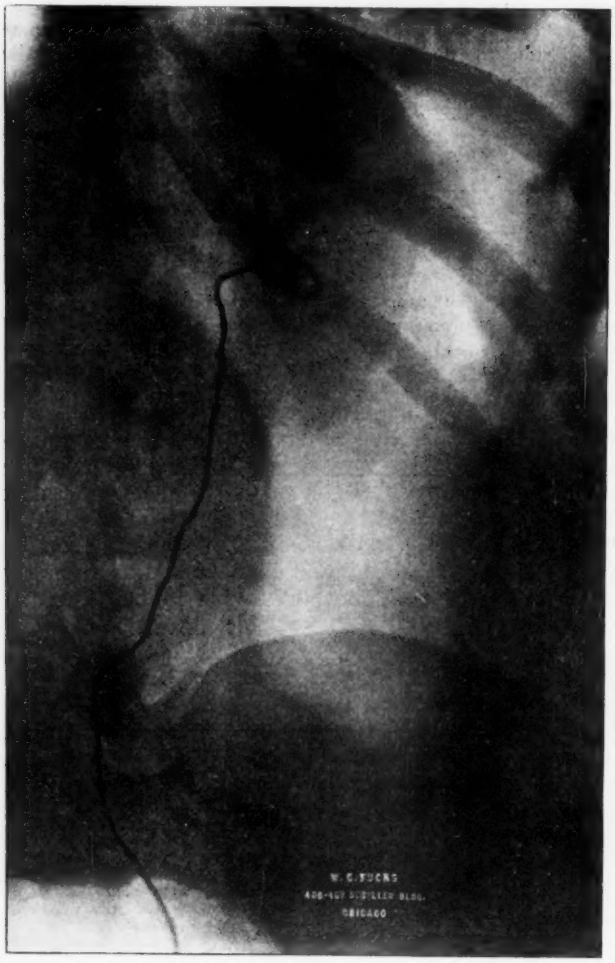


Fig. 1.—Cadaver experiment.

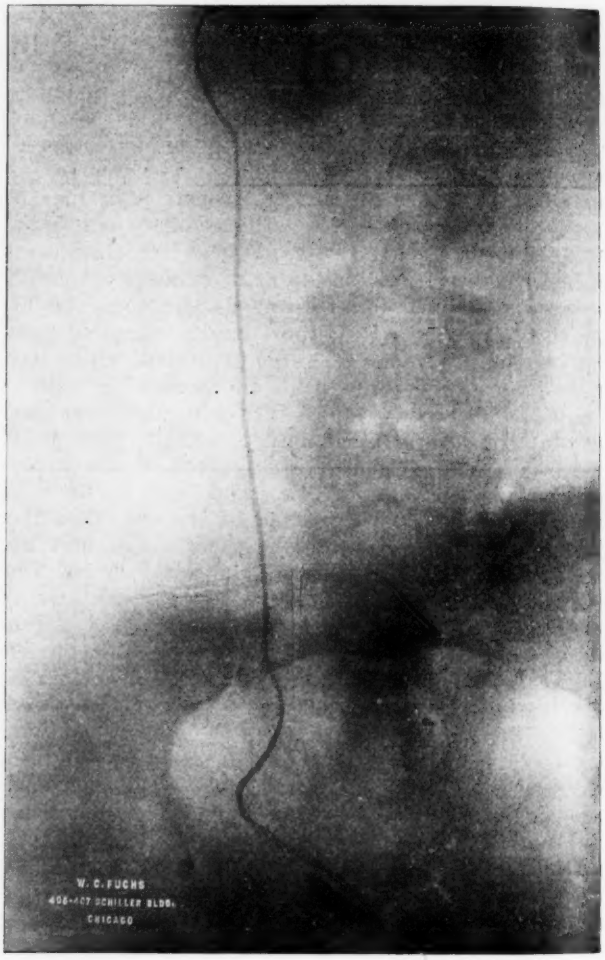


Fig. 2.—Tangential insertion of ureter and dilated renal pelvis.

If you free the ureter by dissection in a cadaver, its course is not changed by the introduction of our sounds, unless excessive force is used. On the other hand, this wire is sufficiently strong not to be torn by its movements through the canal of the cystoscope.

Our results and the diagnostic possibilities of our methods can best be discussed on examination of the pictures which we present. We desire to say that we selected a number of cases as representative types of certain pathologic conditions. The first two pictures are taken from a cadaver and show that, although the sound was pushed up with all possible force, the course

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee of the Section: Drs. W. J. Mayo, H. O. Walker and A. J. Ochsner.

of the ureter was not materially changed; at the same time it can be seen how the end of the sound curls upon itself in a dilated pelvis, thus outlining the renal pelvis.

The next picture is taken from the living and shows: 1, tangential insertion of the ureter; 2, a dilated pelvis outlined exactly by the wire. These conclusions have been verified by the findings during the operation, performed on account of suppuration in the kidney.

The next picture shows what we would determine as cicatricial distortion and consecutive partial obstruction of the right ureter. This patient met with a railroad accident some years ago, resulting in fracture of the pelvis. After dismissal from the hospital symptoms of intermittent hydronephrosis set in and still prevail. The sound can not be passed above the pelvic brim and

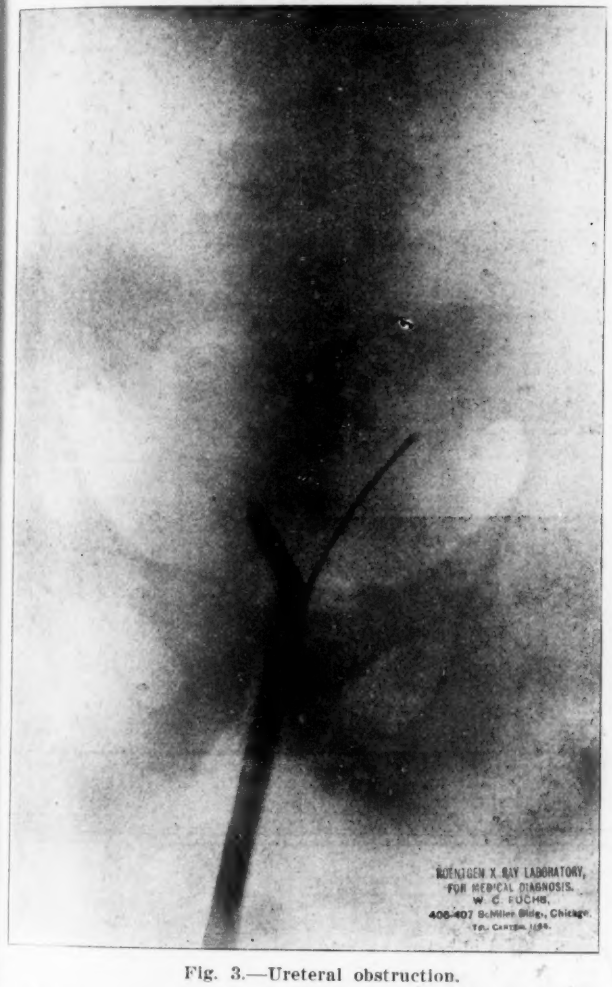


Fig. 3.—Ureteral obstruction.

the skiagram shows a decided deviation of the ureter. There, where the tip of the sound is to be seen, is evidently the seat of the obstruction, and there must be the field of operation.

The next picture shows a stone in the parenchyma of the kidney.

We desire to call attention to the diagnostic features of this case. We see distinctly the distance between the tip of the sound and the calculus, this distance corresponding with the distance of the location of this stone from the renal pelvis. In fact, this patient was operated on some time ago by a Chicago surgeon on account of serious renal symptoms. The pelvis was split open and no stone was found, and even acupuncture failed to reveal the seat of the suspected stone. If this patient will be operated on now, an operator equipped with one of these skiagrams will hardly fail to find the calculus.

The next two pictures are taken from a female patient suffering from floating kidney. These pictures give us some valuable information.

Judging from the outlines of the kidney and the insertion of the ureter, we can see that not only a descensus of the kidney has taken place, but also a rotatory dislocation. Considering these conditions it can be easily understood how temporary obstruction is produced in such cases. The second picture was taken after the kidney was pushed further down. We see how the ureter, in order to follow the excursion of the kidney, was forced into a double curve.

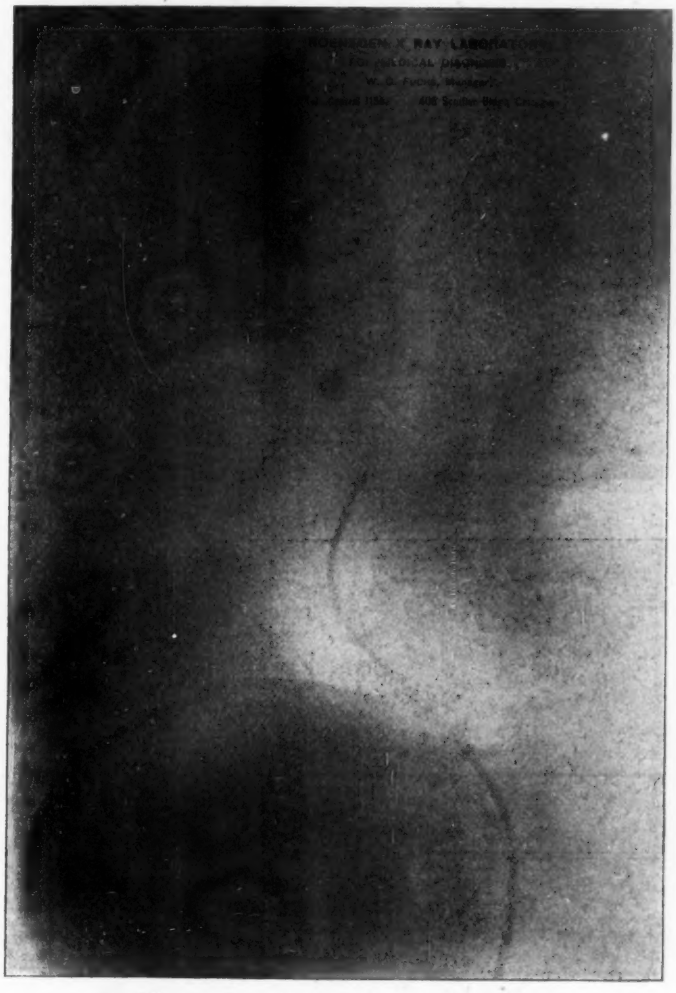


Fig. 4.—Stone in parenchyma of kidney.

At the same time, we wish to show the skiagrams of a kidney and a renal stone, pictures which were taken without previous sounding of the ureter, so that these skiagrams have to be judged upon without the guidance of the ureteral sound. The difference of the diagnostic dignity between such skiagrams and ours is obvious.

If we sum up the results and possibilities of our method we can state our method is free from danger. We can determine the course of the ureters, and the location of renal pelves; we can diagnose dilatation of the renal pelvis; we can determine the location of renal calculi. We are able to determine the seat of an ureteral obstruction, and we are in a position to judge to a certain extent upon the nature of the ureteral obstruction.

We have the possibility of differentiating gallstones from renal stones, which differential diagnosis occasionally is a very hard one, or even impossible to make by other means.

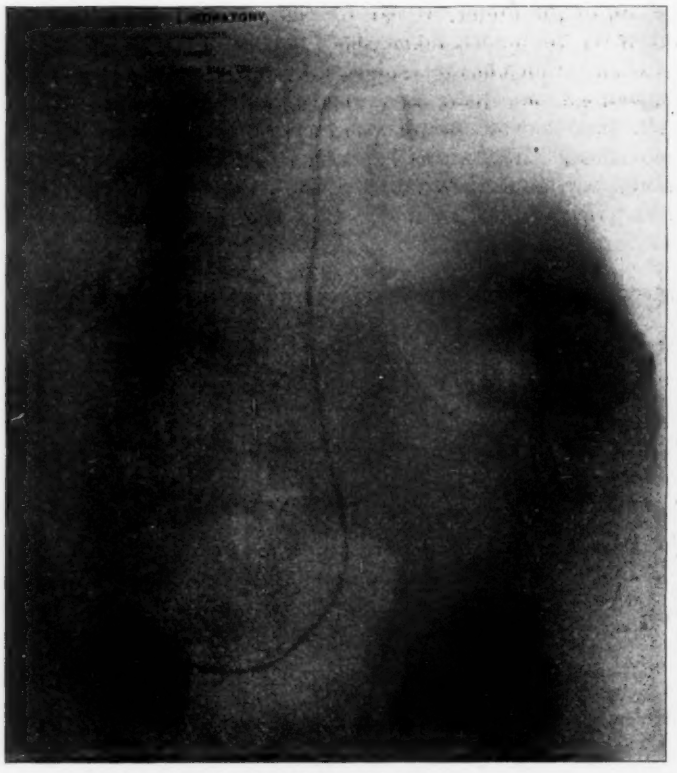


Fig. 5.—Floating kidney, high up.

Fig. 6.—Floating kidney, low down.

We have the possibility of distinguishing between non-renal neoplasms and dislocated and enlarged kidneys.

In all cases where a surgical kidney can not distinctly be made out by bimanual palpation, cases which quite often present greatest difficulty in finding the kidney after incision was made, our method will give most valuable information concerning the topographical location of the kidney.

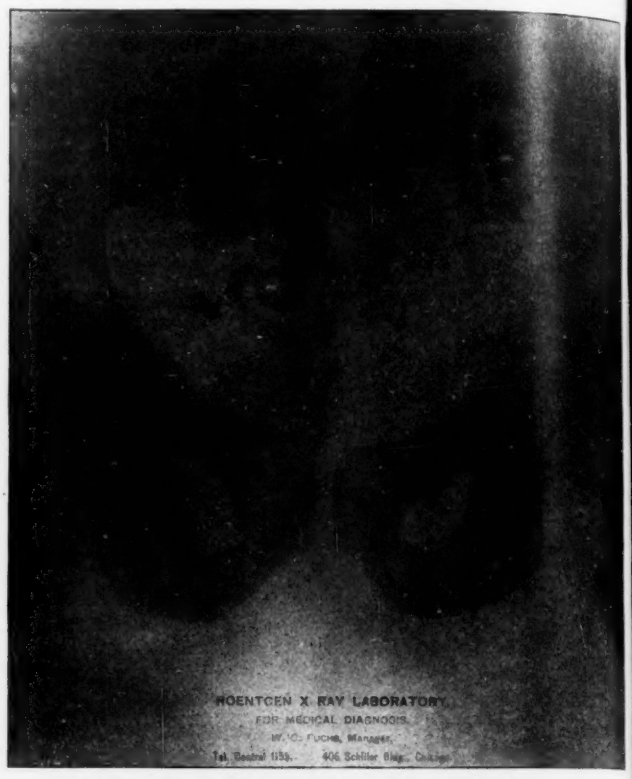


Fig. 7.—Ureteral stone without wire insertion.

Fig. 8.—Kidney stone without wire insertion.

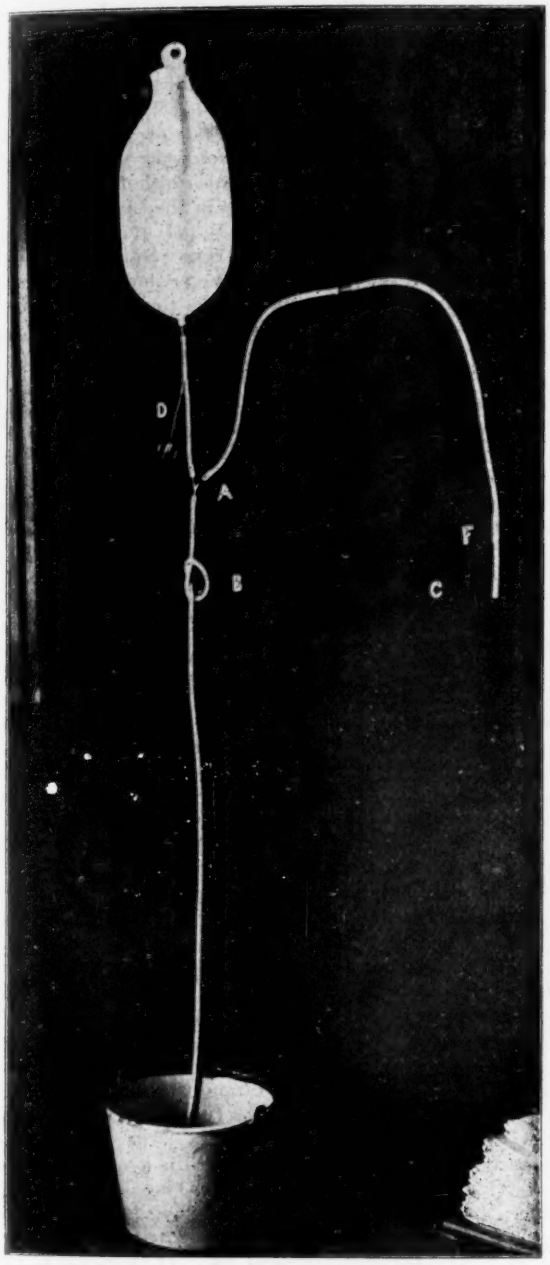
We would like to appeal to our professional colleagues to use this method, for we are positive it means an im-

provement in our diagnostic means and that extensive use of this method will enlarge its possibilities.

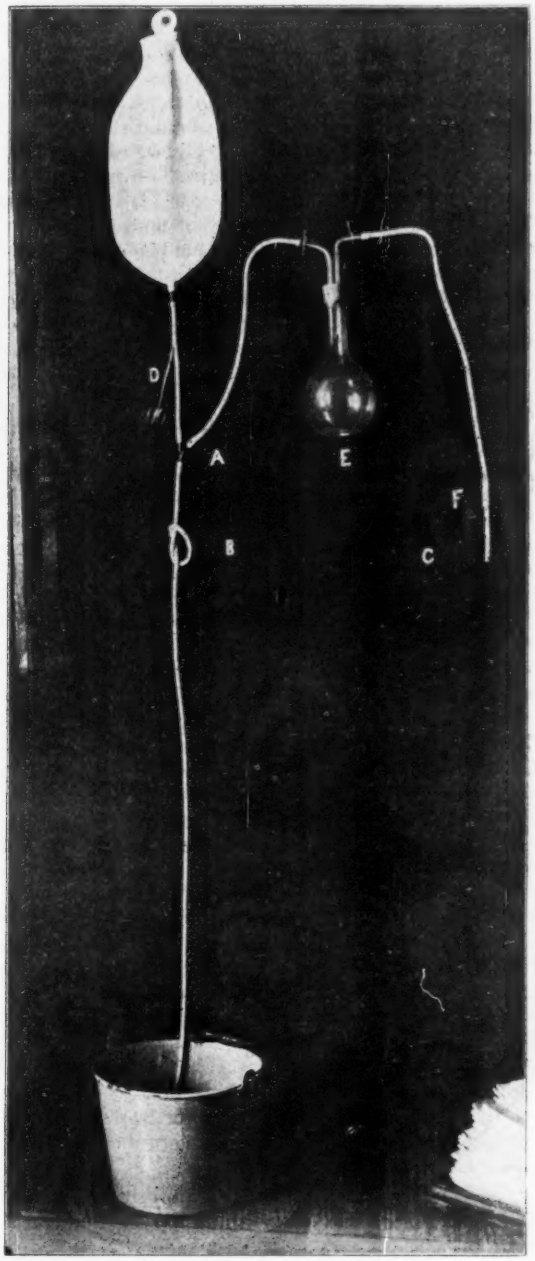
In conclusion we wish to state that Mr. W. C. Fuchs of Chicago has done all our *x*-ray work.

DISCUSSION ON PAPERS OF DRS. FULLER, SYMS, GUITERAS, EASTMAN, GREENE, KOLISCHER AND SCHMIDT.

DR. R. H. M. DAWBARN, New York City—I should be very glad to devote the time allotted to me in opening the discussion to the papers themselves alone, but I have decided, with the consent and approval of the Chairman, to spend my time in demonstrating an apparatus, so simple, for suprapubic drainage, that I think I might say it is pretty nearly ideal. That is a subject, of course, germane to that which we are discussing, of bladder and urethral surgery; I do not intend to take up the question (suprapubic drainage), but assuming it is to be employed, I think I can demonstrate to you that this method is thoroughly satisfactory. I have used it now about ten years, and it is not as well known as it ought to be outside of New York, although Dr. Weir of New York, and a few others here present, have employed it and will speak well of it. Ten years ago to-day, while I was enjoying my misery in a dental chair, it occurred to me that the principle then being used to keep my mouth dry could be used as well in other cavities requiring drainage up-hill. Twenty-five years ago, a dentist of Buffalo, named Dr. Snow, who is now dead, devised this method. Up to that time wads of bibulous paper had always been packed against the salivary ducts to keep the mouth dry. Dr. Keen of Philadelphia, Cathcart of England, Walker of New York,



Dr. Dawbarn's method of suprapubic bladder-drainage. A, the Y tube of vulcanite rubber. F, the "trap;" this is made by simply tying a knot; Dr. Dawbarn's method. C, a catheter with end cut off, thus making two eyes. D, artery forceps; a fountain syringe catch does as well, to regulate the flow. F, short piece of larger tubing; between this and the catheter air enters the bladder freely.



Dr. Dawbarn's method of suprapubic bladder-drainage. Showing a vacuum-bottle introduced into the circuit. E, bottle with rubber stopper and two glass tubes. This is used temporarily, at any time, to reckon the flow of urine per hour, and to analyze it undiluted by fluid from the reservoir.

myself and others, have thought out and used modifications of this thing. The principle, however, belongs to Dr. Snow of Buffalo. The principle is that of intermittent syphonage, and it is not that of the Sprengel air-pump, as you might at the first glance suppose. The only points upon which I can lay claim to originality are the employment of simple and inexpensive means. A large fountain syringe, and a hard rubber

Y-connection, the latter costing 20 cents in New York, are the only essentials, though I commonly add to this a soft rubber catheter of good size, as being less likely than other rubber tubes to become obstructed by accidental pressure. The glass trap employed in the other named inventions is quite needless and has obvious objections. While thinking over the matter it occurred to me that a trap is the same in principle and in effectiveness whether curved as usual, and as we see it always beneath every washstand, in towns, or whether instead it is quite differently shaped as the accompanying photographs indicate. Then the idea occurred of making such a circular trap and also having it self-retaining in that shape by just tying the simplest of all knots in the exit tube of the fountain syringe.

A trap is absolutely essential to the plan. By the catch just above the Y in the figure (which may be an artery forceps, or instead the clamp coming with every fountain syringe, removed from the tube and snapped upon its side, we regulate the speed of flow to drop by drop. When the trap is thus filled, the next drop starts a sudden syphonage of it, which in turn creates a vacuum between it and the bladder, and empties the latter. As often, then, as the trap empties, the bladder is evacuated. Commonly we regulate the flow so that this occurs every five minutes or so; the nurse need only refill a four-quart syringe a very few times daily. The apparatus can in practice be relied upon to maintain, if the patient is supine, a dry bed, and this with comfort to him; that is, the emptying of his bladder will not cause him pain.

It is necessary, however, to permit ordinary atmospheric pressure upon any urine in the bladder, or the apparatus will not empty that viscus. Hence a short piece of larger rubber tubing (shown in the illustration) is loosely slipped over the catheter, where it passes through the abdominal and bladder walls, and the two tubes are fastened together at one or two points by a stitch. Between them air passes in. The outer tube is held in its place as follows: Pass a long narrow strip of zinc oxid adhesive plaster from trochanter to trochanter across the abdomen where it crosses the wound, fasten it by a stitch to the side of the outer tube, just described.

The catheter is cut across between tip and eye and thus two openings into its lower end are arranged for. This has the same advantages that double-eyed stomach tubes possess. A point which I especially like about this drainage apparatus is the ease with which by it one may wash out the bladder; and practically always where we do suprapubic cystotomy this is advisable for a few days at least. It is only necessary to untie the knot—which is the trap—and alternately to pinch the tube below and above the Y. Pinching below, the water flows speedily into the bladder, pinching above, it empties the bladder as quickly. It is as simple a means as possible for washing out a stomach or a bladder in ordinary office work.

Finally, we wish occasionally to estimate the amount of urine that runs per hour, and to analyze it undiluted by the fluid from the fountain syringe. To do this, put into place between the Y and the bladder any large bottle with a tight rubber stopper pierced by two glass tubes. Thereupon, of course, this bottle becomes a vacuum and the urine passes from the bladder into it.

The only device used for the exit of urine by the suprapubic route which, as it seems to me, at all competes with the drainage device which I have been describing are the De Pezzer tube, the plan of Blasucci, and Dr. Gibson's, of New York, suggestion to use on the bladder the Kader gastrostomy idea, of a catheter sewn to the bladder walls so as to run obliquely through them. All of these plans have this in common, that in case the catheter is obstructed—it may become from thick ropy mucus, blood, pus, or calcareous deposits—washing out the bladder is much more difficult and ineffective because of the lack of free atmospheric movement within.

If, instead, the present plan is substituted I do not believe any surgeon will fail to be struck by its practical advantages.

DR. A. E. ROCKEY, Portland, Oregon—The operation of prostatectomy has been an evolution. It began first by cutting out large masses through large incisions, by retractors introduced into the bladder where the operations were done by sight; but the present plans, brought down to a scientific procedure, have given us entirely different methods. That method which will accomplish the object, which is the removal of the obstruction with the least interference of the tissues, will prove to be the best method. I believe that what Dr. Fuller has said about the passive indifference comparing it to the former indifferent treatment of appendicitis has come to be true in regard to prostatectomy. I believe it is incumbent upon the general surgeon to-day to give more attention to this subject. All who have given the subject careful attention know that these cases go year after year until they are almost too bad to be reached, and then either die or come to a radical operation. Now, then, the question for us to decide is, what method shall we adopt? Dr. Guiteras and Dr. Syms have described their technic and Dr. Fuller has described his in his book. In the January number of the St. Louis *Courier of Medicine* (1900) I described the method that I had been using for some time. It is what might be called a recto-vesical method, although at that time I had my assistant place his fingers in the rectum to raise the prostate. Previous to that time I had quite an unusually large number of large glands, more than subsequent experience has demonstrated to be the rule. The method I used was that of a combined morcellation and enucleation. Guiding the instruments with the index finger of my left hand, while an assistant raised the prostate from below and then cutting and tearing with the forceps and scissors in the right hand, in addition to the enucleation made with the finger. Since that time I have modified my technic until it is practically as described by Dr. Guiteras, without the use of perineal drainage. There are some differences in the method I use, as compared with those of Dr. Fuller and Dr. Guiteras, and as we are working together for the development of a satisfactory plan I trust I may be pardoned for taking the time of the Section to describe the technic that I employ. I now universally use a very small incision. It is not necessary in an ordinary case to make an incision over an inch and a half long through the integument and between the muscles, and the incision in the bladder I think is seldom more than an inch in length. Through an incision of that kind you can pull a prostate an inch and a half or two inches in diameter. The gland is usually soft and the bladder elastic. In the occasional instances of fibroma of the gland morcellation as previously mentioned may be done through the small incision. I hold a small-bladed scalpel vertically, and push down through the tissues and make the incision to the bladder in one cut in an upward direction; then push up the prevesical fat with the finger, or divide the lower portion with another touch of the scalpel. The next move is to catch the bladder in the center with a pair of bullet forceps, which is passed to the assistant who draws it to the opposite side. With a Martin needle armed with heavy silkwormgut I make a vertical stitch through the entire bladder wall of about half an inch in the direction of the incision and bring the needle through the abdominal wall and tie one knot without pulling it too tight. Then tie another loop above this through which the safety-pin retaining the drainage tube may be passed. I will illustrate this on the blackboard. The same process is repeated on the other side. The bladder is now well anchored with these stitches. With a quick, downward cut a vertical incision about an inch long is made into the bladder, and the index finger of the left hand inserted for exploration. If stones are present they are removed at once, and the debris thoroughly washed out. If there are no stones present a pair of straight hysterectomy scissors is inserted alongside of the finger, the tip of which rests in the urethra. The blade is pushed well into the urethra, the other one resting back of the gland, and a firm vertical cut is made. The scissors are then laid aside, the left hand removed, and pushed into a rubber glove which is held ready by a nurse. Two fingers of the gloved hand are now inserted into the rectum and the index finger of the right hand is pushed firmly into the intravesical incision in the gland, and the division line of the capsule sought for. When this is found it is almost always possible, by the bi-manual manipulation, to

enucleate the gland in one piece without any other instrumentation. In a few cases morcellation and excision by the scissors of portions which can not otherwise be detached must be resorted to. Cases of this kind, however, I think do not occur oftener than one in ten of those that come to operation. After the enucleation of the gland I insert a large drainage tube to almost the depth of the base of the bladder and fasten it by safety-pin through the loops previously mentioned. This is connected by a long tube passing to a pan under the bed. The method of suspending the bladder brings the inverted outer side against the tube like a valve and usually promotes a syphon drainage. The device described by Dr. Dawbarn would undoubtedly be of additional advantage in this method. I have resorted to perineal drainage as advocated by Dr. Fuller and Dr. Guiteras in but one case. My experience with suprapubic drainage as described here has been so satisfactory that at present I am not inclined to resort to perineal drainage.

Now the operation of suprapubic prostatectomy has been given a very black eye by one of the speakers, who claims for it a terrible death rate. This may have been true of the earlier operations done by the crude technic of McGill's first operation, with its large incision, but is by no means true of the operation which has been described in the papers of Drs. Fuller and Guiteras, and certainly not in my own operations. In many prostatectomies I have lost no patients as a direct result of the operation. One man died the next morning after operation from a pre-existing uremia, and one died in two weeks from a continuation of suppurative cystitis and nephritis due to long previous neglect. So far, I have not encountered a dangerous hemorrhage or one which would induce me to pack the bladder, as has been advised by some, and although I have removed glands larger than my fist, as I have previously described, I have not a single death that can be fairly attributed to the operation. It is not the very large glands that always give the trouble. A gland no larger than an English walnut may completely obstruct, be easily removed, and the patient quickly cured.

My second last patient was 80 years of age and made a magnificent recovery, and a year ago I operated on a man in his 81st year, who also recovered. The day on which I expected to take the train for the Association meeting I received a telephone call requesting me to operate on a case of prostatic obstruction which would be brought the next morning. I mention this case to show the extreme conditions we sometimes find. The man lived seven miles from a physician, who was called without knowing what kind of a case he would find, but the urinary retention was complete. He first tried a rubber catheter without success, and then after nearly half an hour's work, with a metal catheter from his pocket-case, succeeded in emptying the bladder. In the week which followed two other physicians took turns in relieving the man from time to time in the same way. When he was brought to me his scrotum was black with extravasated blood and swollen to about four times its natural size. The bladder could no longer be entered, but a little bloody urine could be drawn from time to time from the prevesical space. At the operation when the incision was made extravasated urine was found outside of the bladder. When the prostate was enucleated there was a clot of black blood an inch and a half in diameter in the tissues under the gland. This man was 72 years of age and a telegram received from my assistant this morning informs me that he is doing well. The profession owes a debt of gratitude to Doctors Fuller, Guiteras, and Syms, for the original work they have done in developing satisfactory methods for the relief of this serious malady.

Dr. Frank Warner, Columbus, Ohio—It has struck me that operative procedures should be employed earlier in the most of these cases. The inclination, it seems to me, is to let the operation for the relief of hypertrophy of the prostate go until it becomes an operation of last resort. If we do not operate before a man is 80 years old, he has suffered from that enlarged prostate many years. Instead of temporizing with this and that method, if we get at it a little earlier and try to avert some of the difficulties that follow, the operation of prostatectomy will receive many more advocates. Instead of waiting until changes have been produced in the bladder and kidneys that render the operation so dangerous, anticipate by an earlier operation. As the gentleman preceding me stated, one of his cases died the following day from uremia. Another case died from some other changes that had already occurred in the kidneys. It only goes to emphasize the fact that if we are going to spend so much time in developing the method to be employed, we want to spend some time in the consideration or give some considerable thought to the question of the time to operate. I do not mean to advocate operating early in every case of hypertrophied prostate. We can not know what ones are going to give great or little trouble. But when a case has proceeded far enough to no longer readily yield its disagreeable symptoms to systematic catherization and bladder irrigation, then is the time to come in with our operation before the extensive pathologic changes have occurred in the urinary apparatus that will render the operation unsuccessful. After these changes have once occurred about the bladder and in the kidneys and the patient has reached a considerable age, it seems to me, it is then better surgery not to attempt the radical operation of prostatectomy, but rather depend upon the drainage of the bladder by a prostatotomy and secure what relief we can in that way rather than in performing the radical operation.

Dr. E. W. Andrews, Chicago—Dr. Fuller has informed us that the Bottini operation is easy, and this is exactly the mistake that those who practice the operation have made. Instead of being easy, I consider the Bottini operation one of the most difficult in surgery. My own experience has been somewhat considerable and disappointing. After Dr. Willie Meyer brought into view very forcibly in his paper the good results of Freudenberg I took it up early and used it 17 times. I am very sorry to say that in this number I had 1 death; that I had only 3 cures, these being rather brilliant and prompt cures, and all the other cases range from complete failure to slight improvement and in some cases with improvement temporarily. I advise cystoscopic inspection of the bladder preceding the Bottini operation, the application of the method only to a limited number of cases, in which we have a circle or collar, which can be divided or in the other cases in which there is rather an abruptly pointing or pedunculated prominence to the right, left or middle. Limited to these selected cases it may give better results in the future. One of my own successful cases developed a somewhat large calculus, the core of which, when I removed it three months later, proved to have been constituted by a slough thrown off from the cautery incision. I should be interested to know whether these have occurred in the practice of others.

Prostatectomy by the median incision in the perineum I consider the coming method. However, as to quick operating, while desirable, we must remember that as in the case of the rectum and other operations requiring the lithotomy position, a very complete anesthesia is essential. We can not hold the patient partly anesthetized in position, and consequently begin early with our incision, as one of the speakers has suggested; working on the perineum before profound anesthesia is attained is rather impracticable. The muscles must be relaxed. Dr. Sym's apparatus is certainly an admirable one, and this leads me to speak of an instrument, the invention of Dr. A. H. Ferguson, which I have found useful. This is a prostatic retractor, accomplishing the same purpose that Dr. Sym's admirable and ingenious apparatus accomplishes in a different manner. The instrument is a urethral staff, inserted like the old-fashioned perineal lithotomy staff. The lower end of this staff would be spoon-shaped, except that it is in reality a hollow band wire-loop. The circumference of the loop here has a measure given in French, say number 25. The introduction of this loop is per urethram, as in lithotomy. Having brought it into the bladder, it is then reversed just as we reverse the Bottini instrument before making the cut. The assistant, holding this loop and elevating it, presses the prostate downward against the peritoneum. We accomplish two things: not only does it press the prostate downward toward

the peritoneum, but on the retraction of tissues surrounding it it restricts the hemorrhage, which, in spite of the statement of the last speaker, may be considerable. We get practically none, or little, until the moment of removal of the instrument at the close of operation.

I agree entirely about the value of narrow incision, for the reason that it diminishes the area from which absorption takes place. I have entirely quit using such an incision as the so-called Zuckerkandl incision for prostatectomy. The horse-shoe incision has the disadvantage that it is too much surgery for these old men; it cuts too much muscle, exposes too much tissue, causing urinary absorption and infection and it is from this source as much as from the suppression of kidney function that we get the uremic poisoning that usually carries off these old men. A small median incision, as described by the first speaker, gives ample room and even with the larger incision we can not see the prostate. When you have made the incision and enucleated your prostate, you have, as a rule, cleared the two lateral lobes with the right forefinger, so that they hang free; and about the last thing you do, I think Dr. Fuller said the second thing you do, is to clear the small middle lobe. As you clear the middle lobe and enucleate, you nearly always get into this sulcus [illustrating] between the middle and lateral lobes and hence you will open the bladder; but you open the bladder not through the membranous urethra, but through the prostatic urethra. If you open the membranous urethra it is pretty sure to be torn, and is less favorable than to drain the bladder.

DR. G. MACGOWAN, Los Angeles—The paper on the skiagraphs of renal calculi is intensely interesting to one who has paid attention to bladder and urethral surgery, for it is a new method placed into our hands, presumably, to be used by all with equal success. We certainly should have in it an agent which would give us better diagnostic results than we have been able to get heretofore. The gentlemen say that they have introduced these leaden bougies through a Brenner cystoscope. Most of those who have used a Brenner cystoscope believe that, for the purpose of viewing the bladder base, it is the best cystoscope that exists, but for the purpose of catheterizing the ureters, it has been one of the poorest of cystoscopes. From my personal experience, and, I believe, from the personal experience of most of the individuals who have devoted time and attention to this specialty of genito-urinary surgery, the catheterization of the ureter by the electric cystoscope, if the ureter be a healthy one, is an exceedingly difficult matter. In the hands of those who use the cystoscope every day, or a number of times a week, if a ureter is enlarged, if you have a gaping ureter, it is not a difficult thing, with a modified Casper, or with the Nitze-Albarren, to catheterize it, with fair ease. I have yet to know of any man except Casper, or one of his pupils, who has been able to claim to catheterize normal ureters rapidly. I saw Young do it in Baltimore, the other day, with the modified Casper cystoscope, on a neurasthenic, who held perfectly still while he did it. Most of us will not be able to use these sounds, and also will not be able to have at our command a person who is competent to take excellent skiagraphic pictures.

I think we all owe to Dr. Guiteras a debt of great gratitude for the most interesting manner in which he presented to us the methods of treating enlarged prostates—I mean prostatectomy and the prostatotomy of Bottini. I say prostatectomy first, because it is my rule to advise my patients, whenever they come to me requiring such relief, to submit themselves to a prostatectomy. If they decline to do so, I advise them to permit a prostatotomy. Once in a while I advise prostatotomy first. I have operated on about fifty old men by prostatotomy and prostatectomy. These men varied in ages from 65 to 81 years; only one was younger, and he was 63. The results have not been perfect, nor can they be, with either method. All you have to do is to take out the bladder of one of these individuals, open it and examine it, and you will see the utter impossibility of the skill of man, under any circumstances, to give such a man a perfect bladder again.

Dr. Fuller and Dr. Syms spoke about obtaining perfect results. This is not my usual experience, but it is wonderful how, after a developed obstruction to the outflow of urine is removed, the apparently atrophied bladders will regain contractility, and the apparently fibroid bladders will expand gradually to useful proportions. In most of the cases of prostatectomy that I have done, I have used Dr. Fuller's method, and I believe, in the large majority of cases of difficult prostatectomies, that it is the only method that is available. You may make your small incision through the perineum, and use the admirable methods described of pulling down the prostate, with success, in thin men with shallow perineums. But if you have a stout man, with a deep perineum, you may insert one finger into the rectum to pull down the prostate and endeavor to work the index finger of the other hand into the narrow space made from the perineal wound, usually through the urethra, into the capsule of the prostate, but you will find that you can not remove a large middle lobe, or an obstructing lateral lobe, projecting well into the bladder, by this method. True, you can pull away, and take out, small pieces of this prostate through the perineum. What does an enlarged prostate look like upon section, in the majority of cases? It looks like a geological specimen known as pudding stone; a matrix filled with nodules of various sizes. The secreting glands, unevenly enlarged, lie embedded in their stroma of fibrous and muscular tissues. You can not usually tell exactly which special lump is the cause of the urinary obstruction. You have to take them all out if you wish to make a certain cure.

A number of years ago I operated upon a gentleman, who was, at one time, the most distinguished orthopedic surgeon in America. I removed from him a prostate as large as a fist, in a number of pieces. I thought I had it all. He made a good recovery. Six months afterwards he died of other troubles. He had instructed me to examine his bladder, prostate and kidneys, postmortem. I did so, and found the left kidney very much atrophied, while the other was nearly destroyed by the pressure of a stone almost as large as a duck's egg. One little glandular enlargement, left in the prostatic stroma at the time of the operation, had grown to be larger than a pigeon's egg. This was intravesical, but, if it had been intra-urethral, he would have had a return of his urinary obstruction.

When a man's leg is broken, and you let him out of bed for exercise and give him a pair of crutches, would he not be extremely foolish to throw away one of his crutches and hobble on the other? That is exactly the position we are in, we surgeons, with regard to operating enlarged prostates. You have, on the one hand, a most excellent method without the knife, given to us by Bottini. You have, on the other hand, a most beautiful and absolutely surgical method of removal, given by, it matters not whom. Because a man can not or will not, or his relatives will not allow him to submit to a prostatectomy, do not refuse him the alternative of a prostatotomy.

What matters it if after a Bottini he has an ounce, or two, or three ounces of residual urine, where he previously had ten, fifty, or even two quarts, as we have seen them have. Is not the cure relatively a good one?

Take up one of these bladders with its wall thickened by chronic cystitis, or fibroid degeneration, enlarged, or contracted—could you hope for a perfect cure? You would not get it if you did. But if, during the remaining years of these old men's lives, you can reduce the disturbance of their nightly rest by lessening the necessity for urinating by five, ten, or twenty times; or, if you only give them extra ease in using the catheter, you have done these men great good.

I want to assure Dr. Fuller that my experience as a dermatologist taught me, years ago, that the scars made by the galvanic current are of two kinds; if you use the positive pole for electrolysis, you will get a contracting scar that is hard, dense, unyielding, deformative. If you use the negative pole you will get smooth scars, flexible, soft, which do not deform—my face is full of them. The burns produced by galvanocautery do not deform, are smooth and flexible. I have in my collection of bladders those of two men operated upon by me by the Bottini method. They have beautiful channels in the

bottoms of their urethræ. If you did not know, you certainly could not pick out what portion of the bladder neck the Bottini incision had burned through by any contracted or hardened condition of the scar. They are perfectly flexible. His fears upon this point are without foundation in fact, and he can rest assured that the Bottini can be used without that fancied danger.

I wish to pay one little tribute to Dr. Greene's paper. Ultzmann used to teach us in Vienna, that the boy who had gonorrhœa and, as a sequel, had an acute prostatitis, which became chronic, lasting for six months, or, for one, two, or three years, was certain not to have an enlarged prostate when he grew old. As I have grown older, I have doubted the exactitude of his observations in these cases. The argument Dr. Greene presents to us in these pictures, is an argument from "after before." I have never seen a prostate in chronic obstructive prostatitis free from inflammation. These prostates have all been inflammatory, and if you will but think about the preceding and accompanying evils of an enlarged prostate, and also of the instrumentation to which these urethras have been subjected, you will readily see that the evidences presented here are worth very little.

With Dr. Fuller's great skill he makes his operation appear too easy, for it does not seem difficult to him. It is not an easy operation. In some of your patients the hemorrhage is extreme; they bleed so that you wish you had never touched them. They bleed until it makes your hair rise. Then others have prostates that you can not peel out and you would be thankful to have a better rongeur than those we use at the present time, to bite our way through them.

Dr. J. E. Allaben, Rockford, Ill.—An old man, 77 years of age, who had suffered from prostatic trouble for ten years, is compelled to use the catheter most of the time. About eight months ago he had complete retention of urine, which had existed for three days when I was called in consultation. Numerous unsuccessful attempts had been made to pass a catheter, and I also failed in an attempt under anesthesia. I did a suprapubic cystotomy, relieving the bladder of several quarts of urine mixed with pus. Recovery was rapid. Would the gentlemen under these conditions recommend either immediate prostatectomy or the operation at a later date when the patient is quite comfortable at the present time, save the slight inconvenience incurred by the wearing of a tube in the suprapubic wound which drains into a rubber urinal worn upon the person? The patient is able to be about and attend to business better than for ten years.

Dr. R. Guiteras, in reply—I would like to answer the Doctor's question regarding the case of prostatic hypertrophy. I think in cases in which a patient has acute attack of retention, and a large amount of urine is present, that the bladder should never be emptied at one time as would result in the case of an operation. If a catheter can be passed we should never draw off more than a pint of urine at the first seance. If we can not pass a catheter after the use of morphin, rest, hot baths, etc., we should aspirate suprapubically, not drawing off more than one pint the first time, as the withdrawal of 18 ounces has caused hematuria, and that of 22 ounces has caused suppression of urine due to acute congestion of the kidneys. If the kidneys are damaged medically or surgically any interference with the genito-urinary tract is likely to cause this renal congestion, as the kidneys can not work as they should. They can not eliminate what they ought, that is, the necessary amount of urea, and uremia and death may follow. Therefore, first relieve the retention, either by catheter or aspiration. Aspirate several times if necessary, then always accustom the patient to the catheter before performing such a radical operation as prostatectomy. Improve the condition of the bladder as much as possible by catheterization and local treatment.

Dr. MacGowan is certainly right. Neither after a prostatotomy or a prostatotomy can one have the bladder which we had in a 21-year old man, although it is wonderful to note how much tone is regained in bladders in which we have seen before the operation by the cystoscope numerous trabeculæ and diverticuli, accompanied by a chronic cystitis, and to think that these bladders really regain tone after an operation, and that the patients have control of them!

I would speak one word in favor of the Bottini operation. Of course, I believe the enucleation of the prostate, prostatectomy, is the coming operation, and that it is in the same position to-day hysterectomy was a number of years ago, and, gentlemen, working along the same lines in which we are now engaged, we will probably some day or other formulate an operation which can be performed with ease, and without much danger to the patient, and which will give good results. This I feel sure of.

The Bottini method does seem to-day a crude and unscientific one, yet the results in certain cases are good. I know this from my own operations, and I have a record of 24 with careful histories and no deaths. I have a number of patients operated upon two years ago, and all but three were relieved. I do not say that they were cured. Two of the three still complain of a constant burning sensation, an ardor urinæ, although their residual urine has been diminished to one-half an ounce. In the other case the patient still suffers from frequency, although the residual urine has decreased from 9 ounces to one-half an ounce. There was another more recent case which was a very remarkable one, as the man had led a catheter life for four years with complete retention and after the operation had only 4 ounces of residual urine.

To illustrate the function of the genito-urinary organs, I mention another case of a man with 5 ounces of residual urine before the operation. Two years after it he said he was perfectly well with absolutely no symptoms. He said he felt as though he had never been troubled with his prostate before, and notwithstanding the fact that the cautery blade had traveled through his prostate in three different places and he was 65 years of age, he still had control of his general functions and came to me suffering from a venereal trouble, saying that he was in prime condition.

One word more about prostatectomy. We can not always enucleate the prostate. Of this I am sure. Some years ago a patient was sent to me for a prostatectomy, but I did not consider his condition sufficiently good to warrant an operation. I felt that he would die, and planned after his death to have an autopsy and remove his prostate. As soon as he died I tried to remove it, but I could only tear it away in little pieces, and could not perform an enucleation. In other words, the enucleating finger could not be made to sweep around the lobes between them and the capsule and shell them out. It must be remembered in speaking of prostates that they grow in the line of least resistance. The capsule is very dense in these cases of prostatic hypertrophy and it is very much thickened. I have seen capsules taken from cases postmortem which were in some places one-half an inch in thickness. Therefore, we can not always tell by rectal touch alone the shape of the prostate. We must be governed as well by the amount of the impediment in the prostatic urethra, by the length of the canal, and the amount of residual urine. We must bear in mind that the gland in undergoing enlargement and working along the line of least resistance tends to protrude, as a rule, not into the bladder as much as it does upward and backward into the urethra and the bladder.

Dr. E. Fuller, in reply—Everyone who has much experience with prostatic surgery will have his individual peculiarities and preferences in operating. In some special instances the perineal route to accomplish the removal of prostatic obstruction is the preferable one. Many times, however, it is not. By the suprapubic route one can always accomplish the removal of the prostatic obstruction. This can not always be done by the perineal route. Dr. Syms, in his paper, illustrates this point for one of his perineal cases failed because he was unable to effect the removal of the obstruction. One can not always enucleate a prostatic obstruction. Sometimes one has to use cutting forceps to effect its removal and very rarely the obstructing mass may be too fibrous and firm even for forceps, in which rare cases Jessup's prostatic scissors may be necessary. Undue hardness and adherency may indicate scirrhous cancer of the part and when such cases are encountered it is

always well to have an histological examination made of the tissues removed.

Dr. Greene's paper was of interest. I do not, however, feel that his conclusions have any support as far as my clinical observations are concerned. In fact, I am firmly of the opinion that prostatic hypertrophy is not in the least dependent for its origin on a preceding gonorrhea. I have often brought to notice the fact that inflammatory tumefactions involving the fibrous tissues about the seminal vesicles and extending into the fibrous capsule of the prostate—the source of which inflammations is the seminal vesicles—are frequently mistaken for prostatic hypertrophy. In the production of these inflammatory lesions the gonococcus, of course, plays an important rôle. There is no evidence of an inflammatory process in the histology of prostatic hypertrophy such as affects elderly men. In fact, Dr. MacGowan has just called attention to the theory that gonorrhea protects against a subsequent senile hypertrophy of the prostate. Whether it does or not I do not know further than that it is a fact that very many sufferers from prostatic hypertrophy seem to be from among those who have led exemplary lives. Another strong point in favor of the fact that gonorrhea has nothing to do with the causation of prostatic hypertrophy lies in the fact: the inhabitants of India, China and Japan seem to be wholly or certainly in very great measure free from that complaint, while gonorrhea is as prevalent among them as it is among the races prone to senile disease of the prostate.

The apparatus shown by Dr. Dawbarn is certainly ingenious. I do not, however, require his apparatus to guard against "wet bed" after my suprapubic cystotomies, since I so close the wound against the drainage tube that no leakage takes place until such time as the tube is permanently removed to allow the closure of the incision. Then, of course, under any circumstances there will be temporary wetness, which requires the wearing of an absorbent pad.

Dr. Andrews thinks that the Bottini operation is not easy, because, as far as I can judge, he has obtained only three good results out of seventeen cases. I do not see that goes to show that the operation is not easy, for I feel sure that Dr. Andrews operated skilfully in all his cases and did as well as anyone could with the Bottini operation. It simply shows the point I made in my paper, to-wit: how few cases are suited to the Bottini operation.

Dr. MacGowan has laid great stress on the vesical lesions, existing many times in the bladders of those who have suffered long from prostatic obstruction and from this argues that even though the obstruction be removed the function of the bladder must remain to a large degree crippled. This is one of the old arguments against prostatectomy. Sir Henry Thompson and Guyon formerly taught that a bladder which had once lost its expulsive force owing to prostatic obstruction would never regain it and that accordingly the removal of the obstruction would do little good. This theory has been shown by clinical experience to be entirely fallacious and so are Dr. MacGowan's fears regarding the recovery of the vesical function and the persistency of vesical lesions. If a prostatectomy is thoroughly and properly done, that is, if all the prostatic obstruction is removed and then if the bladder through the maintenance of artificial drainage is kept at complete rest for four weeks or thereabout, perfect repair will take place in the lesions which have resulted from the obstruction and the bladder on the healing of the drainage and incisions will be able to empty itself naturally. I never had but one case where after prostatectomy the bladder was not able to empty itself. In that instance, owing to the tubercular pericystitis, a disease entirely independent of the prostatic hypertrophy, the walls of the bladder were so bound down by adhesions that they could not contract. Sometimes a patient may dribble a little after the operation, losing some urine on active exercise, but this is usually temporary.

Dr. MacGowan also advanced the theory that in the performance of the Bottini operation if the negative pole of the battery were used for cauterization a less scar would result. Desnos, some years ago, in his experiments on dogs' urethræ disproved this assertion. He found that very severe strictures followed the use of electrical cauterization of the part and that the use of the positive or negative current made no difference.

DR. J. RILUS EASTMAN, in reply—I believe that when Dr. Greene assumes that inflammation is an important etiological factor in prostatic hypertrophy, he is not far from the truth. In the microscopic examination of a considerable number of prostates in Virchow's Institute for the study of the corpora amylacea, I was struck with the great frequency with which the cardinal signs of inflammation appeared in the prostatic tissues. It was developed that the corpora amylacea themselves are formed by the desquamation of spheres of epithelium from the walls of the acini of the prostate gland by subsequent amyloid degeneration of these cells. These prostates were taken from persons of all ages, from childhood to old age, and in all these cases desquamation of acinus epithelium had taken place to a greater or lesser degree. Not only that, but there was almost constant infiltration of the stroma by leucocytes—fibroblasts and young connective tissue cells and fibers—indicating that interstitial inflammation, as well as parenchymatous inflammation existed. It is not difficult to assume, inasmuch as these inflammatory conditions are commonly present, that prostatic enlargement is in some way associated with them. I predict that time and investigation will develop that inflammation is a very important etiologic factor in prostatic hypertrophy.

DR. R. H. GREENE, in reply—I did not expect to be believed when I advanced the view that prostatic hypertrophy was due to inflammation often probably of gonorrheal origin. It is not a popular view. I met a very eminent man yesterday, a member of this Association. I suggested to him that it might be possible that prostatic hypertrophy was due to a continuation of an old inflammation in the posterior urethra. He said: "Oh, no; I am threatened with prostatic hypertrophy myself." It is not a popular view and it will be a long time before it becomes so, but I believe it is the true one.

Dr. MacGowan says that of course we have some inflammation in these cases from the necessary passage of sounds and catheters. I would reply that the text-books on histology and lecturers on the subject have, as the result of autopsical evidence through a wrong interpretation of the evidence, taught that prostatic hypertrophy was not an inflammatory condition, but that prostatic hypertrophy was either a simple adenoma, that is, an increase of the glandular tissue, or an increase of the muscular tissue, or a mixture of both. It is, however, entirely an inflammatory condition, judging from the evidence of the sections furnished by me, with an atrophy of the normal constituents of the gland, and not a local inflammation superimposed on a tumor, which is his view of the condition.

Dr. Fuller says that the inflammation is outside of the prostate in many cases. I believe it. That is why you can not tell by feeling through the rectum whether the prostate is enlarged or not on account of a similar condition to the one he mentions going on frequently outside; but his views concerning that condition have no relation to my investigations, but these specimens I have shown are sections through the prostate and show an inflammatory condition in all of them of various types, and have nothing to do with inflammations outside the prostate. If my theories as to the nature of the hypertrophy are correct, the methods of treatment would apparently be two: one to treat chronic posterior urethritis long and persistently and to keep patients with chronic urethritis under observation for a considerable length of time, and to examine them from time to time after active treatment had ceased; the other is in those cases in whom insufficiency of the bladder has taken place and the residual urine causes trouble to operate and remove tissue enough, to overcome the obstruction and in a manner not to cause the least formation of cicatrical tissue. For these purposes neither the Bottini operation nor the operation for complete enucleation seem indicated. You have in the West, a man in St. Louis, who has done more operations on the prostate, I believe, than any other man in the United States; his method of operating through the posterior urethra with enucleating just about what is necessary, is apparently

attended with a very small death rate. I refer to Dr. John P. Brison, of St. Louis.

DR. PARKER SYMS, in reply—I would urge the importance of one thing; if operation is to be done for the relief of prostatic obstruction it should be done early. When physicians and the public understand this and act upon their knowledge a great change will be wrought, for the mortality will be as nothing compared with that of the present time.

Concerning the Bottini operation, I am glad to state my views emphatically. I believe it to be an absolutely unsurgical and unscientific procedure. Years ago it was demonstrated and acknowledged by the profession that internal urethrotomy should not be performed deeper than the pendulous portion of the urethra. Whenever urethrotomy is necessary beyond that point, it should be done by external incision so that drainage may render it safe. This is acknowledged and accepted by the profession. The Bottini operation leaves a wound at the neck of a bladder which is full of infective urine. It is certainly a dangerous procedure. It is an incomplete operation, and I think it will be seen so to be when cases so operated upon have been observed more fully.

I would like to say concerning the failure to remove the prostate in my second case, to which Dr. Fuller has referred, that it was at a time before I had invented my retractor, and it was partly on account of this failure that I did devise the instrument. I believe to-day that every hypertrophied prostate can be removed through a simple median incision in the perineum.

Years ago I learned that when a statement was made by men to the effect that they were able to do things which I thought impossible, not to boldly assert that these things could not be done, for it has been my happy experience in watching the advance of progressive surgery, to find the impossibilities of yesterday become the possibilities of to-day. I think it is proper when one realizes his inability to perform a certain act, to say, "I can not do it," not to say "it can not be done," for there may be found someone who is able to accomplish it.

Concerning the choice of method of prostatectomy, I must say that I think a simple, median perineal wound—which is all that is left after operation as done by the method I have described above—is a far simpler and safer procedure than is any form of suprapubic cystotomy. The drainage is along the line of gravitation and is complete, the wound is a simple one and not large.

The patients are fairly comfortable and recover promptly. I have had mine sitting up at periods varying from the fifth to the tenth day. In two patients, as I have stated, there has been temporary dribbling after healing, but this has been owing to the fact that I made an unduly large cleft through the prostatic urethra. I am not sure to-day whether this is absolutely necessary in some cases or not, but I believe it is not necessary. I think it may be avoided by making the opening in the membranous urethra not too far back. In my last case I was careful to avoid this and was careful to separate the bladder from the prostate before I began the final enucleation. In that patient I removed the tube from the bladder on the fourth day, when I removed the packing; he had complete control of his bladder at once and made a most speedy recovery. That case, when I first saw him, had 52 ounces of very foul urine in the bladder. I did not operate nor empty the bladder at once but I succeeded with great difficulty in introducing a catheter and gradually emptying the bladder and slightly reducing its capacity.

Regarding the final functions of these bladders, I think it may be truly said that we can never restore them to histological perfection, but from the reports of the operators who have done the best work in this line, I think it can be said that these bladders do recover function fully. A bladder that is contracted may be dilated; a bladder that is dilated may be reduced in size. Certainly in my experience the patients have regained their functions so far that they have been able to hold their urine from four to six hours, holding from six to ten ounces, and have been able to empty their bladders, showing practically no residual urine.

THE TREATMENT OF PNEUMONIA.*

DE LANCEY ROCHESTER, M.D.

ASSOCIATE PROFESSOR OF MEDICINE, UNIVERSITY OF BUFFALO.

BUFFALO, N. Y.

In order to formulate a rational plan of treatment for a given disease it is necessary to recognize the nature of the disease, its course and mode of termination when recovery takes place, and its course and mode of termination when death occurs; it is also necessary to be able to recognize by symptoms and physical signs the changes that are occurring in the organs and tissues of the body during the course of the disease and to know the prognostic value of such changes when recognized.

Pneumonia is an acute infectious disease manifesting itself as a general toxemia, with a local disturbance in the lung passing through the clinically recognizable states of congestion, hepatization and resolution or disintegration.

A brief review of the clinical course of a favorable case shows us the initial chill; the high temperature; the increased frequency of respiration; the pulse of moderate frequency, full volume, high tension and normal rhythm; the coated tongue; the anorexia; the sluggish liver and inactive bowel; a kidney not functioning properly; the diminished excretion of chlorids; the presence in the urine of albumin, and usually casts; the more or less pronounced nervous symptoms; the cough; the rusty sputum; the dry hot skin; the flushed face of slightly dusky hue, and the leucocytosis. For a week or ten days these symptoms persist, the most important change occurring in the increasing frequency of respiration, and loss of the tension and sometimes change in rhythm of the pulse.

At the end of this period there occurs a profuse sweat, the temperature falls, the respiration becomes less frequent, the pulse improves in rhythm, the patient falls into a quiet sleep and awakens refreshed and well. If the case does not go on to recovery or dies before the time of the crisis, death occurs either from the intensity of the toxemia or from interference with oxygenation from involvement of too great extent of lung or from some complication.

The chief cause of death in pneumonia, exclusive of complications, is failure of the circulation through degeneration of the myocardium.

Several factors enter into the causation of this myocardial degeneration, namely, the toxemia of the infection acting directly upon the muscle fibers; the same cause active in the general system and producing an increase in the arterial tension throughout the body, thus making harder work for the myocardium of the left heart already suffering from toxemia; the morbid changes in the lung causing obstruction to onflow of the blood from the right heart, thus throwing harder work upon the right myocardium also suffering from the toxemia. The amount of pulmonary involvement would be, of course, a decided factor from this point of view, as well as from that of interference with oxygenation, too great an interference with oxygenation producing death.

Sometimes death occurs from the effect of the toxemia upon the brain-wild maniacal delirium wearing the patient out, or a low, muttering delirium ending in coma and death. Sometimes the kidney bears the

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brunt of the attack and uremia is added to the toxemia of the infecting organism.

Occasionally the gastro-intestinal tract is most seriously involved, and there occurs a violent diarrhea or a marked fibrinous inflammation of the lining mucous membrane.

The most common and serious complications of pneumonia from which death may occur are meningitis, pericarditis, endocarditis, nephritis and empyema. These, however, will not be considered in this discussion, which is limited to the treatment of pneumonia.

This review of the course and modes of termination of pneumonia shows that the most serious element in the disease is the toxemia, and next to this in degree of seriousness is the amount of lung involvement existing at any one time in the course of the disease. The first aim of the treatment, then, should be to get rid of toxins. The natural avenues of excretion by which toxins may be carried off are the respiratory, the renal, the gastro-intestinal and the cutaneous. In all cases of pneumonia the lung and the kidney are involved in the morbid process to a greater or less degree, according to the case. It would be obvious folly then to attempt to stimulate either of these tracts to any great excretory activity.

The bowels and the skin remain and nature has pointed out by the profuse sweat that occurs at the time of the crisis the avenue that she chooses for the greater part of the work of excretion. Accordingly, the prime therapeutic measures for relieving the toxemia are opening up of the bowels and skin and keeping them active. For this purpose there should be administered an initial dose of calomel of 0.50 gram followed by a saline laxative. This measure should be repeated during the course of the disease for the same purpose as the first dose and for the further purpose of relieving the distension of the right heart when indications of that condition are present.

To keep the skin active there is nothing more efficacious and less harmful than the proper use of the hot mustard foot bath. This can be given with next to no disturbance of the patient, the tub being put into the bed, with most excellent results so far as sweating is concerned. These baths may be kept up at four-hour intervals throughout the course of the disease. This sweating, in connection with the stimulation to be referred to later, is, in the opinion of the writer, the most important of the general therapeutic measures.

Another measure of value in preventing further bacterial invasion, is the frequent and thorough cleansing of the mouth with a mildly antiseptic solution. I think this a measure of considerable importance, as we know the pneumococcus is present in the mouth in considerable numbers.

While attempting to get rid of toxins by these means, it is important to put and keep the patient in the best possible condition to resist and overcome the toxemia that is present. For this purpose care should be exercised in the selection of a proper diet. This should be fluid and so far as possible should be sterile, so that no new poisons may be introduced. A large amount of pure water should be administered so that there may be plenty of fluid to flush the excretory organs. It is best administered in small amounts at short intervals.

Besides food, stimulation is necessary, and among stimulants strychnin and alcohol are the most useful in pneumonia. Moreover, the administration of them should not be delayed until failing circulation peremptorily calls for them. As soon as the diagnosis is made the strychnin should be begun in doses of 0.002 gram at four to six hour intervals as indicated. The interval may be shortened and the dose increased as symptoms which call for such increase in dose appear. As much as 0.004 gram every two hours may be given hypodermically with the best results.

Next to strychnin, alcohol is our best stimulant. Nevertheless, in some cases it seems to produce decided cerebral disturbance, particularly in those addicted to its abuse. In such cases ammonium carbonate or aromatic spirits of ammonium is a most useful substitute. These drugs are usually well borne by the stomach if combined with liquor ammonii acetatis and administered in mucilage or milk.

The local treatment of the lung is of importance. A careful physical examination of the chest should be made by the physician at every visit. In this way he can tell when congestion is beginning in any part; and vigorous local treatment will in many cases prevent the further progress of the morbid process. As soon as a portion of the lung is shown by physical examination to be in a state of beginning congestion, the prompt and thorough application of leeches, wet cups or dry cups over the part, will often stay the process there; or if it does not stop it entirely, will delay its progress twenty-four or forty-eight hours and give an opportunity for the clearing up of any previously involved portion of lung. My preference is for leeching or wet cupping. If dry cupping is resorted to, it should be very thorough, the skin and subcutaneous tissue rising up in the cup to as great a height as possible and turning blue or purple while there. The cups should be left on for a half hour and the process repeated every four to six hours. I have seen, postmortem, the direct anatomical evidence of the local value of this procedure, when thoroughly done. During the intervals between the applications of the cups the chest should be covered with a light woolen jacket. The poultice jacket should be relegated to the dark ages.

With ice applications I have not produced the relief of congestion desired. If, in spite of these local measures to relieve congestion, the process still persists and we begin to have evidence of over-distension of right heart, such as increasing cyanosis, the pulse losing its tension and becoming small and sometimes irregular, the liver enlarged, the veins pulsating and the area of cardiac dulness increasing chiefly to the right, whether a murmur of tricuspid insufficiency is present or not, prompt relief can usually be obtained by the withdrawal of 8, 10, or 12 ounces of blood from the median vein of the forearm. This procedure may be repeated several times if need be in the course of the disease. The procedure is of value both for its local effect in relieving the right heart distension and also for its general effect in withdrawing a decided amount of toxic material. At this time a little digitalis, given with due regard to its physiologic effect, may be of decided value.

After the withdrawal of blood, and in cases in which heart failure is imminent without evidence of right distension, the subcutaneous injection of normal salt solution has on several occasions proven of inestimable value. The use of the salt solution by rectum has also been of value, but of course does not give the prompt result that the hypodermic administration does. Whether the value of the procedure is dependent upon the restoration of bulk to the blood after the relief to the right heart has been obtained or whether the salt itself is of value, is

worthy of investigation, the fact being established that in three cases that have come under my observation—in one of them three times—the administration of the salt solution certainly had a marvelous effect in averting an evidently impending death.

If more than one lobe is involved the regular administration of pure oxygen gas at stated times, shortening the interval and prolonging the duration of the administration if cyanosis persists or increases, or if the frequency of breathing progresses to dyspnea, has proven of undoubted value in a number of cases.

In case of sleeplessness and restlessness chloralamid, chloral, Dover's powder, morphin and hyoscin hydrobromate are to be recommended in the order named; though with the thorough attention to the relief of toxemia by keeping the bowels and skin active, it is seldom that recourse to hypnotics is necessary.

On the possible complication of pneumonia I do not wish to touch, as that would take me beyond the scope of the subject announced; but I do desire to say that under the eliminative supporting treatment outlined complications are rare.

Before closing I wish to utter a protest against the treatment of pneumonia by large doses of digitalis in the early stages of the disease as irrational and unscientific, being based on a wrong conception of the nature of the disease.

If our conception of the infectious nature of pneumonia is correct, by the time the chill has taken place the disease is established, and any efforts to jugulate the disease by the use of remedies employed to overcome or prevent pulmonary congestion are most certainly misdirected, for preventing the change in the lung—and it is doubtful if the digitalis treatment can accomplish this—certainly will not overcome the toxemia; two of the most serious cases of pneumonia that have come under my observation have had no pulmonary involvement demonstrable by physical signs.

The treatment of pneumonia by the pneumococcus antitoxin is the natural and rational plan from the recognition of the infectious nature of the disease, but so far the attempts to produce a reliable antitoxin serum that will preserve its antitoxic powers have not been entirely successful, and consequently there are very great variations in the reports as to the results obtained by its use. However, improvements are being made and eventually I have no doubt that pneumonia will be put in the same category with diphtheria, which was formerly dreaded and of great mortality, but now, when carefully studied, diagnosed early and properly treated with large doses of antitoxin, shows 100 per cent. of recoveries. Until that time comes, however, we will get our best results by recognizing the essentially toxic nature of the disease and treating it along the eliminative supporting lines here suggested, which may be briefly summarized as follows:

1. The sustaining of the metabolic processes of the individual by the administration of easily digested or predigested foods in small quantities at stated intervals, the administration of large amounts of pure water for eliminative purposes and the administration of oxygen gas by inhalation whenever the absorbing surface of the pulmonary mucosa is involved to such extent as to interfere with proper metabolic oxygenation.

2. Elimination, (a) by the liver and bowel through the vigorous use of calomel and salts: (b) by the skin through sweats induced by external heat: (c) through withdrawal of blood when indicated by right heart distension.

3. Stimulation of heart by strychnin, alcohol or ammonium carbonate, and in suitable cases by the subcutaneous injection of normal salt solution.

4. The local treatment of the lung by leeching, wet cupping or dry cupping as indicated.

As the value of the method of treatment detailed above was questioned at the time of the presentation of the paper, I beg leave to add, in publication, the statistics on which its value rests.

In some of the cases the notes are, unfortunately, decidedly incomplete, even the date of crisis not being mentioned, but enough is present—date, age, diagnosis, complications, treatment and result, to give them the necessary value for this statistical report.

Onset.	Termination.	Result.	Age.	Crises, Complications, Etc.
1, 1, '91.	1, 24, 91.	Recovery.	76	
2, 1,	3, 10,	"	14	
2, 9.	3, 28.	"	39	
2, 15.	3, 14.	"	52	
4, 14,	5, 21.	"	56	
8, 20,	9, 25.	"	82	
10, 31,	. . . .	"	34	
1, 16, '92.	. . . .	"	15	
1, 18	. . . .	"	29	
1, 18,	1, 31, '92,	"	74	
1, 31,	2, 20,	"	54	
2, 5,	2, 23,	"	22	
2, 7,	2, 21,	"	60	
2, 9,	2, 11,	Died,	35	Alcoholism; D. T.
3, 4,		Recovery,	37	
3, 6,	5, 20,	"	55	Chronic nephritis.
9, 30.	10, 14,	"	20	
10, 13,	11, 1,	"	35	
10, 26.	. . . .	"	47	
1, 6, '93,	1, 21, '93,	"	23	Erysipelas
1, 4,	1, 19,	"	21	
1, 9,	1, 25,	"	24	
2, 22,	3, 15,	"	24	
2, 26,	3, 11,	"	30	
3, 6,	3, 21,	"	22	
3, 27,	4, 11.	"	45	
9, 13,	10, 10,	"	48	Entire left lung: patient was bled 16 ounces twice.
11, 4,	11, 23,	"	23	
11, 13,	12, 19,	"	20	
11, 18,	12, 12.	"	35	
11, 23,	12, 8,	"	50	
11, 27,	12, 4,	Died,	62	Sick one week before treatment.
11, 29.	12, 28,	Recovery,	40	Tuberculosis.
12, 7,	12, 9,	Died,	60	Sick eight days before treatment.
12, 14.	12, 28.	Recovery,	57	
12, 16,	1, 4, '94.	"	45	
12, 26,	3, 29,	"	18	Endo- and pericarditis.
12, 27,	1, 9,	"	24	
1, 7, '94,	2, 4,	"	81	
1, 23,	3, 15,	"	32	
3, 8,	3, 29,	"	38	
3, 24,	4, 4,	"	32	
5, 20,	6, 6,	"	48	
7, 29,	8, 22,	"	81	
7, 30,	8, 24,	"	22	
9, 25,	10, 29,	"	82	
10, 7,	11, 21,	"	20	
10, 15,	10, 19,	Died,	27	Typhoid fever.
11, 3,	12, 5,	Recovery,	54	
11, 1,	11, 15,	"	29	
12, 2,	12, 24,	"	38	
11, 30,	12, 11,	"	20	
12, 9,	1, 4, '95,	"	12	
12, 10,	1, 2,	"	40	Double.
1, 11, '95.	1, 30,	"	43	Crisis tenth day.
1, 15,	1, 28,	"	21	
1, 17,	3, 14,	"	25	Typhoid fever.
1, 24,	2, 2,	"	33	
2, 2,	2, 19,	"	50	Mitral stenosis.
2, 12,	3, 7,	"	32	Crisis seventh day.
2, 13,	3, 25,	"	80	
2, 18,	3, 12,	"	38	Crisis ninth day.
2, 28,	3, 19,	"	32	Crisis seventh day.
2, 25,	3, 25,	"	25	
2, 25,	3, 26,	"	38	Developed lung abscess.
3, 19,	4, 17,	"	27	Crisis seventh day. Empyema.
5, 26,	6, 2,	Died,	50	Entire left lung; lower lobe of right.
9, 22,	10, 5,	Recovery,	30	
10, 20,	11, 13,	"	5	Crisis ninth day.
10, 20,	11, 11,	"	14	Crisis twelfth day.
11, 5,	11, 27,	"	70	
11, 6,	12, 3,	"	23	Crisis seventh day.
11, 5.	11, 30,	"	33	Crisis nineteenth day.
11, 3,	11, 22,	"	18	Crisis twelfth day.
11, 12,	11, 28,	"	23	Crisis tenth day.
11, 29,	12, 7,	Died,	33	Sick fourteen days before treatment (Alcoholism).
11, 23,	1, 8, '96,	Recovery,	67	Crisis ninth day.
12, 2,	12, 9,	"	25	
12, 1,	12, 13,	"	24	Crisis third day.
12, 2,	2, 25,	"	24	Crisis tenth day, followed by serous effusion.
1, 1, '96,	1, 19,	"	48	
1, 1,	1, 22,	"	48	Crisis ninth day.

Onset.	Termination.	Result.	Age.	Crises, Complications, Etc.
3, 12,	3, 18,	Died,	48	Alcoholism; sick two weeks before treatment; crisis March 16.
6, 28,	7, 20,	Recovery,	50	
8, 12,	8, 31,	"	26	
8, 14,	9, 25,	"	83	
9, 17,	12, 8,	"	15	12
9, 18,	9, 25,	Died,	12	Pericarditis.
10, 7,	10, 15,	Recovery,	30	
11, 4,	11, 16,	Died,	61	Chronic nephritis, myocardial degeneration.
11, 14,	11, 18,	"	25	
11, 14,	12, 16,	Recovery,	78	
12, 23,	2, 17, '97,	"	29	Double; crisis twentieth day.
1, 2, '97,	1, 25,	"	26	Crisis seventh day.
1, 9,	1, 26,	"	36	Crisis seventh day.
1, 17,	2, 16,	"	41	
2, 19,	3, 27,	"	25	Crisis ninth day.
3, 12,	4, 10,	"	62	Morphine habits.
3, 20,	3, 26,	Died,	24	Double, pericarditis.
3, 20,	4, 2,	"	65	Nephritis, sick 8 days before treatment.
3, 24,	4, 14,	Recovery,	26	Crisis seventh day.
3, 29,	4, 22,	"	44	
8, 30,	9, 22,	"	17	Crisis seventh day.
9, 25,	10, 15,	"	32	Crisis ninth day.
11, 15,	12, 10,	"	84	
11, 26,	12, 31,	"	65	Crisis ninth day.
1, 1, '98,	1, 18, '98,	"	8	Crisis ninth day.
1, 15,	1, 19,	"	20	Crisis seventh day.
1, 29,	2, 24,	"	21	Crisis tenth day.
2, 26,	3, 9,	"	24	Crisis seventh day.
3, 1,	3, 29,	"	44	Chronic nephritis.
3, 17,	4, 15,	"	37	Crisis tenth day.
3, 28,	4, 15,	"	14	Crisis seventh day.
3, 26,	4, 20,	"	28	Pseudo-crisis fourth day, real crisis seventh day.
7, 2,	7, 17,	"	16	Crisis seventh day.
7, 17,	7, 31,	"	82	Crisis seventh day.
10, 10,	11, 21,	"	35	Crisis seventh day.
11, 15,	12, 17,	"	82	Crisis tenth day.
11, 28,	12, 8,	Died,	46	Purulent pericarditis.
11, 11,	12, 9,	Recovery,	18	Crisis seventh day.
11, 27,	1, 22, '99,	"	30	Crisis fourteenth day.
1, 10, '99,	2, 6,	"	43	Crisis ninth day.
1, 11,	1, 13,	Died,	45	Sick seven days before treatment; entire left, upper right.
2, 3,	3, 2,	Recovery,	13	Crisis tenth day.
2, 5,	2, 25,	"	40	Crisis tenth day.
3, 11,	3, 20,	Died,	32	Alcoholism; D. T.
3, 26,	4, 29,	Recovery,	60	Crisis tenth day.
3, 27,	4, 21,	"	56	Crisis tenth day.
4, 19,	5, 15,	"	83	Crisis tenth day.
7, 5,	8, 14,	"	27	Crisis tenth day.
8, 8,	8, 19,	"	29	Crisis fifth day.
9, 21,	10, 27,	"	80	Crisis tenth day.
11, 25,	12, 16,	"	22	Crisis seventh day.
11, 25,	1, 8, '00,	"	51	Crisis tenth day.
12, 16,	1, 1,	"	35	Crisis tenth day.
1, 12, '00,	1, 16,	Died,	45	Double.
1, 24,	2, 27,	Recovery,	50	Crisis tenth day; cystitis.
2, 16,	3, 7,	"	58	Asthma.
2, 19,	3, 7,	"	54	Mitral obstruction.
2, 20,	3, 19,	"	62	Crisis tenth day.
2, 22,	3, 22,	"	35	Crisis tenth day.
2, 28,	4, 10,	"	17	Crisis tenth day.
3, 1,	3, 22,	"	34	Crisis seventh day.
3, 11,	4, 16,	"	34	Crisis tenth day; diphtheria.
3, 25,	4, 16,	Died,	38	Double.
3, 10,	3, 26,	Recovery,	23	
3, 20,	. .	"	26	
4, 1,	4, 6,	Died,	89	Edema of lung; asthma; dilated heart.
9, 12,	12, 13,	Recovery,	35	Relapsing pneumonia; three distinct attacks, with crisis on seventh, tenth and ninth days respectively.
9, 29,	10, 12,	"	25	Crisis seventh day.
10, 9,	12, 1,	"	35	Entire right lung; crisis tenth day.
10, 16,	10, 26,	"	39	Crisis fifth day.
10, 5,	11, 3,	"	12	Crisis fifth day.
10, 21,	11, 24,	"	23	
10, 25,	11, 1,	Died,	67	
10, 31,	11 27,	Recovery,	61	Crisis seventh day.
10, 25,	12, 18,	"	46	Crisis tenth day.
11, 14,	12, 5,	"	35	Crisis tenth day.
11, 26,	12, 17,	"	19	Crisis tenth day.
1, 3, '01,	3, 7, '01,	"	54	Crisis tenth day.
1, 3,	2, 28,	"	82	Crisis tenth day.
1, 10,	1, 27,	"	50	Crisis seventh day.
1, 11,	2, 22,	"	50	Influenza.
1, 19,	2, 14,	"	40	Crisis tenth day; double pneumonia.
1, 21,	2, 12,	"	50	
1, 30,	2, 1,	Died,	46	Alcoholism; nephritis; entire left lung.
2, 21,	2, 27,	"	45	Double pneumonia.
3, 13,	4, 1,	Recovery,	49	Crisis seventh day.

The cases reported are from the service of Dr. Charles G. Stockton in the Buffalo General Hospital, my own service in the Buffalo Hospital of the Sisters of Charity and from my private practice.

Altogether, 168 cases were treated with 17 deaths. This gives a death rate of 10 1/8 per cent. This is better than most other methods of treatment, and if the cases that died are analyzed it will be found that four had been sick a week or more before treatment was instituted, and so can not fairly be considered, that two suffered with chronic nephritis, one had asthma and a dilated heart as well as being 89 years of age; that one had typhoid fever as a complication and that two entered the hospital with delirium tremens, no history obtainable as to the length of illness and died in less than 48 hours. If these cases are excluded, as I think they fairly may be, it reduces the number of cases to 158 and the deaths to 7, giving a death rate of 4.43 per cent. better than any other plan of treatment that I have heard of.

Although the number of cases reported is small it covers a period of a little over ten years and includes cases from all walks of life and of all ages, and may therefore, I think, be considered fairly representative.

THE ABORTIVE TREATMENT OF PNEUMONIA.

A PLEA FOR THE USE OF CARDIAC DEPRESSANTS IN THE TREATMENT OF THE CONGESTIVE STAGE OF PNEUMONIA.*

W. L. DICKERSON, M.D.

ST. LOUIS, MO.

In presenting this subject I have nothing new to offer and for this I apologize, but in this day of rapid advancement in medicine we are apt to reach out after the newer remedies and forget the older ones; therefore, I offer this plea for the use of one of the old cardiac depressants which seems to be rapidly giving way to new, and, I believe, less valuable remedies in the treatment of the congestive stage of sthenic types of pneumonia, namely veratrum viride.

That it is applicable to the congestive stage only and that the physician is often called too late to use it, I am perfectly willing to concede. I must admit also that its use really is an abortive treatment and that in the stage of hepatization is worse than useless and may be said to be malpractice.

We must also bear in mind the fact that many cases of pneumonia run through their course without medication and terminate satisfactorily; also that when we apply treatment we are often uncertain whether we have benefited our patient or not. Perhaps he would have gotten along just as well without our aid.

We may apply our abortive treatment and our patient get along admirably, but almost every practitioner, especially of the country, where we so often find cases of pneumonia in the robust, will tell you that he has met cases in which he was certain the patient must have a full-fledged pneumonia, bound to run its course, and yet in three or four days find him looking about over his farm seemingly a perfectly well man. We can only apply our remedies, and if successful, we are happy; if not, who can say but that our patient might have been worse had such treatment not been instituted.

In the congestive stage of pneumonia we must suppose that we have to contend with a condition not unlike an inflammation in other parts. When such inflammation takes place the vessels begin to dilate in the inflamed area, and as their lumen becomes larger the blood is attracted in this direction and soon a much larger amount of blood is accumulated here. The heart becomes somewhat excited and with each stroke increases the amount. Under such conditions it seems that the vessels in other portions of the body are contracted, thus increasing the amount sent to this area and lessening the opportunity to get away from it. A condition of stasis exists—stagnation, if you please. Still, the heart

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with every stroke is adding more blood to the oversupply, and soon the white blood corpuscles begin to migrate and we have our exudate escaping through the weakened walls of these overcrowded vessels. But the process goes on; the excited heart is pumping more blood into the area; the vessels become more dilated, consequently weaker, and the exudate greater.

In what way can we relieve the condition? There seems to be two rational methods of relief: bleeding and the use of cardiac depressants. The use of the coal-tar preparations is common in this stage, but I believe nearly all thinking physicians will agree that it is not rational treatment.

Nancrede proved that blood taken from the venous side of an inflammation produces an increase in the rapidity with lessened force in the circulation in the parts.

Certainly it is reasonable to suppose that a certain amount of blood taken from the vessels will relieve this congestion. It would seem then that our forefathers, when they advocated bleeding, were as rational in their treatment as we are in some of ours; but our knowledge of the disease has taught us that if it must run its course, the patient needs all the blood he has to withstand the strain; therefore, bleeding is now avoided and we look for other measures. On the other hand, our physiologists have taught us that the vessels of the human anatomy when fully dilated are capable of holding more than twice the amount of blood contained therein. Further, it has been demonstrated that the abdominal vessels alone when fully dilated will hold all the blood in the human economy.

Now, if we can in this stage of congestion, by the use of some drug, accomplish in a few hours this dilatation of the vessels, the blood will naturally seek the course offering least resistance. Then the inflamed area is relieved of pressure and stagnation; the exudate ceases to be thrown out, or at least in much less quantity. Have we not then accomplished something in the treatment of this condition? Will we not by limiting the exudate lessen the severity of the attack, perhaps abort? There are three drugs in our armamentarium capable of doing this: Tartar emetic, aconite and veratrum viride.

The first is too depressing to use satisfactorily. To get the effect upon the vasomotor center, tartar emetic must be pushed to such an extent as to produce very unpleasant nausea and sometimes purging; and the depression is so marked that it is best not used.

Aconite, while it answers very well, does not sufficiently paralyze the vasomotor center to widen the blood paths so markedly as does veratrum; nor is it so safe; consequently it must take a second place.

Wood, in speaking of veratrum viride, says: "In full therapeutic doses it lowers the pulse rate both by a direct action upon the muscle (jervin), and by stimulating the inhibitory nerves (veratroidin); it diminishes the force of the heart beat by a direct influence on the cardiac muscle (jervin) and produces a general vasomotor paralysis (jervin)." Butler, in speaking of it, says: "Jervin renders the pulse slower and softer with marked reduction of arterial pressure. This action is due to direct depression of the cardiac muscle, or of the motor ganglia, the dilatation of the arterioles being the result of a depressant effect upon the vasomotor center."

Further; it is safer than either of others named. Veratrum viride then fulfills all the indications. It is efficient; it is safe. By its action we may paralyze the vasomotor center, dilating the blood paths all over the body, and the blood flowing in the way of least resistance; the vessels in the inflamed area are relieved of the pressure and the consequent exudate ceases to be thrown out.

To do this it has seemed best to me to administer the tincture (U.S.P.), which is a 40 per cent. solution, in oft-repeated doses. Norwood's tincture is a 50 per cent., or a saturated solution, and possesses no advantage over the tincture.

From 2 to 5 minims of the tincture is given every thirty minutes to an hour, until the physiological effect is noticed, viz., some nausea, sweating, relaxation of the skin, a reduction of the pulse and temperature. Keep the patient quiet in the recumbent position to avoid excessive nausea, bearing in mind that vomiting in all cases should be avoided if possible. In this there is usually but little difficulty. Small doses of laudanum have been recommended for this purpose, but it is seldom necessary if the above precautions are taken and the remedy is prescribed in peppermint water.

After such reduction in the pulse the remedy may be continued in the same sized dose, but at longer intervals, say from two to four hours, so long as it seems best to control the circulation. Given in this way, beginning within the first few hours after the initial chill, many cases may be aborted, and the patient is back at his business in three or four days.

In those cases in which we fail to abort, or are called too late to do so, it may be administered as suggested, so long as it seems necessary to control the circulation. This is sometimes a very difficult point to decide. Certainly I have not been in the habit of stopping its administration as soon as an exudate is found present, as has been advised by some writers upon the subject. But so long as the pressure is too great, the exudate being thrown out and the pulse angry, I have been satisfied with its results and believe that it lessens the amount of exudate and therefore cuts short the attack.

DISCUSSION ON PAPERS OF DRS. ROCHESTER AND DICKERSON.

DR. DE LANCEY ROCHESTER said that he must antagonize the position taken by the author of the last paper. He thought that the treatment of acute pneumonia by the use of aconite, veratrum viride, and tartar emetic, a most irrational treatment. The patient dies from the heart. Now, what does this treatment do? It commences by depressing the heart. If we wish to act upon the peripheral circulation, why not use warm baths and counter-irritation? The patient is suffering from toxins; we are dealing with an infectious disease; why begin with a depressing agent?

DR. W. L. DICKERSON said that it is true that veratrum viride will depress the heart and it was just for this reason that he gave it in acute pneumonia, but only during the congestive stage. If we can prevent excessive congestion and excessive exudation by this agent why not use it? Digitalis increases the congestion by stimulating the vasomotor center, and contracting the arterioles, thereby raising arterial tension. Therefore, it should not be given early in the disease. He does not give his patients veratrum viride after the stage of hepatization has commenced; but if a patient can be seen in the first six to twelve hours, he gives it in small doses as described in his paper and his patients get well. As regards the other treatment, namely, with strychnin and applications to the chest, mustard foot baths, etc., he approved of them when indicated.

DR. J. F. SPELMAN, Anaconda, Mont., said that he believed that no man had ever aborted pneumonia. If a patient starts out with acute pneumonia, he has an infectious process which will go through its stages regularly to resolution, or one of the less favorable forms of termination; but it will not be aborted. He approved generally of the treatment in the first paper. There were two points that he would wish to make in regard

to therapeutics. Before speaking about them he would like to explain that in his practice in a mining region he had had unusual opportunities of observing this disease, considerably greater than those of ordinary private practice. From the experience which he had had during the last four years, he had come to the conclusion that medicine does not affect acute pneumonia at all. Apart from acting upon the organs of elimination, which had been spoken of, and a supporting treatment, remedies are of no avail. For the pain, a hypodermic of morphin—one-eighth grain—is perhaps the best. In the general treatment, strychnin, cocain and caffein do good, not because the heart is failing, but because it is going to fail and they prevent it. For the pneumonic process, there is no specific treatment at the present time.

DR. DE LANCEY ROCHESTER said that he wished to explain that the reason he had presented his paper was because he had observed reports in various journals lately which spoke of cutting short acute pneumonia by the use of certain agents. His object was to point out that in this disease we have to deal with toxemia, and that cardiac depressants are out of place. He thought that the reader of the last paper makes a mistake in giving cardiac depressants and in not giving strychnin early enough.

DR. RICHARD C. MOORE, Omaha, Neb., said that no treatment for acute pneumonia could be formulated into a hard and fast rule to apply equally to all cases. We must take into consideration the general condition of the patient, and the attendant circumstances, in selecting the appropriate treatment. While the treatment advocated by Dr. Dickerson would be useful in some cases, to put an alcoholic patient upon such a depressing treatment would be only to hasten the fatal result. On the other hand, to subject a sthenic case to the opposite course of treatment, to fill him up with food and inject strychnia into him, would hardly be in accordance with our views of proper treatment. In such a case, the veratrum viride would give prompt relief; the excited restless patient sinking into a sweet sleep after a few doses. So in cases which start in asthenic and you give him whisky and cardiac stimulants, you have the delirium lessening and he will sink into a quiet sleep. The treatment must, therefore, be appropriate with the stage and condition of the patient. After we get the patient into a more comfortable condition, we can then consider the infectious character of the disease. Some years ago, at the recommendation of Dr. Andrew H. Smith, of New York, he had used the carbonate of creosote in acute pneumonia and he had been surprised to see that he could get the crisis so soon after the administration of this remedy. With regard to local applications, he knew of nothing that would equal the oiled-silk jacket during the acute stage; under this oiled silk he makes a cold-water application, upon absorbent cotton. It is astonishing how much relief is afforded to the patient by the cold water and oiled-silk applications. After taking it off and leaving the house the speaker had known patients to beg the nurse to renew it. This can be accepted as proof that it is of value. He desired to call attention to the usefulness of carbonate of creosote in acute pneumonia, which he thought acted almost like a specific.

THE CHAIRMAN, referring to the increased mortality from acute pneumonia reported by the preceding speaker, said that there had been an epidemic of influenza during the last few months, which may have been the cause of the increased number of cases of pneumonia and increased mortality.

DR. SRELMAN said that there had not been any influenza in his part of the country for the last six months and did not regard his cases of pneumonia as of this type.

THE CHAIRMAN explained that he had asked this question because in many of the communities of the East the mortality from pneumonia had increased greatly, and it had occurred to him that it was due to the fact of the prevalence of influenza at the time.

DR. CASTON said that he lived in a malarial section of the country in Tennessee, where they have malaria in the warm months and the same patients have pneumonia in the winter months. He realized that this disease is generally said to be an infectious disease. He knew that authorities state that it is a self-limited disease. But he could not agree with these gentlemen altogether, because if his experience had taught him anything whatever, it was that pneumonia can be aborted by a good article of veratrum viride. He was firmly convinced of this fact. He had practiced in the country for 19 to 20 years and he had treated a great many cases of pneumonia and he had aborted a great many cases of pneumonia. He had so much confidence in this treatment, based upon his own experience, that he could say, if there is anything he liked to treat it was pneumonia.

DR. MARY K. MCCOY, Duluth, Minn., inquired of the last speaker, how did he know that it was really pneumonia, if the cases got well so soon? How could he know that it would have been pneumonia, if it had not been aborted?

DR. HOFFMAN, St. Paul, said that nearly every medical society that he had attended for the last few years had had a symposium on the treatment of pneumonia. He had observed that nearly every man who had read a paper had given some scheme for saving patients. Now, in spite of all this, it is a deplorable fact that the death rate of pneumonia is increasing in the last few years. Whether it is because our statistics are more correct, or it is because the disease has become more virulent, he did not know, but he thought that it was the general experience that the disease at present is more fatal. But this is no reason for losing faith in the good effects from treatment. He said that the experience of the Doctor from Montana was correct and that the mortality had been greater. When he first went to Montana he had treated his patients and had lost some, but his results were encouraging. It would be just as much a mistake to give depressants to all cases as it would be to give digitalis and strychnia to all cases. He, therefore, approved the recommendation to adopt the treatment to the case.

STRABISMUS; ITS TREATMENT.*

A. EDWARD DAVIS, A.M., M.D.

Professor of Diseases of the Eye in the New York Post-Graduate Medical School and Hospital; Assistant Surgeon in the Manhattan Eye and Ear Hospital, Etc.

NEW YORK CITY.

(Concluded from page 1172.)

RESULTS.

Non-Operative Treatment.—In February, 1900, I reported results of treatment in private practice of 40 cases of convergent strabismus by the non-operative method. In these 40 cases 25 per cent. were cured; that is, secured parallelism, and single binocular vision was obtained in 7.5 per cent. of the cases. While in hospital practice, in 262 cases, where glasses alone were tried, and these not faithfully, only about 5 per cent. of the cases were cured.

Since February, 1900, I have given special attention to the non-operative method of treatment of squint in private practice and at the clinic of Drs. Lewis and Van Fleet, at the Manhattan Eye and Ear Hospital, where all of the squint cases, through the courtesy of Drs. Van Fleet and Lewis, came under my personal care. I have also, during that period, been performing Panas' operation, when any operation was necessary, in my private practice, 11 cases in all. At the clinic, Drs. Roosa, Van Fleet, Meanor and myself have operated by the Panas method on 23 cases. Excluding cases which came but once or twice, or have been lost from observation, there are 83 cases upon which to make a final report as to results of treatment, non-operative and operative. Three of these cases had been operated upon by simple tenotomy some years before coming under my care without

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee of the Section: Drs. J. A. Lippincott, Casey A. Wood and H. V. Würdemann.

securing parallelism. By means of non-operative treatment I gave two of them single binocular vision and one of them binocular vision, and have included them in a separate table to show the benefit of non-operative treatment in securing a perfect result after operative treatment had failed. From observing Table No. 1 it will be seen by the non-operative method of treatment 23 cases, or 28.75 per cent., were cured, that is, secured parallelism. Eleven of the 23 cases, or 13.75 per cent. secured single binocular vision; and 3 cases, or 3.75 per cent., secured binocular vision; 17 cases, or 21.25 per cent., were improved, some a little and some very much; 4 cases, or 5 per cent., were unimproved, but these did not follow treatment as directed; finally 2 cases, or 2.5 per cent., became worse while under treatment. Thirty-four cases, or 42.5 per cent., came to operation, the results of which are shown in Table No. 2.

Thirty-seven of the 46 cases in Table No. 1 had convergent squint and 9 divergent. Hypermetropia was present in 41 of the cases and myopia in 5.

By means of the non-operative treatment alone 28.75 per cent. of the cases were cured, and with further continuance of the treatment 30 per cent. at least should secure parallelism. Priestly Smith,[2] in a series of 200 cases, secured binocular vision of some kind in 28.5 per cent. of the cases by the use of non-operative treatment alone, a very close agreement in results obtained in the cases reported by me.

W. Lang and James Barrett[3] reported a series of 102 cases in which 36.3 per cent. were cured by means of glasses alone, but they counted the cases which had five degrees and less of squint as cures, while I have not done so. I have counted no case as a cure which did not have parallelism, the angle alpha being taken into consideration. Judging from all of the statistics that I have been able to look up, I would say 30 per cent. of all cases of squint may be cured by non-operative treatment alone. Such a result certainly justifies our persistent and careful trial of this method of treatment in every case before resorting to operation.

As valuable as the non-operative treatment is before operative measures are undertaken it is just as valuable, or more so even, in completing a cure after operation. He who operates on a squint and does not follow it up with after-treatment and close observation will fail to make a cure in many cases. While, if the cases are followed up with the non-operative treatment, the cure is often completed.

The younger the patient and the earlier the non-operative treatment is begun the better the results. This point has been shown by all observers who have reported cases, and is a well-established fact.

Of the 34 cases which came to operation 29 cases were convergent and 5 divergent. Hypermetropia was present in 31 cases, 3 of which had divergence; myopia was present in 3 cases, one of which had convergence.

Twenty-six of the cases, or 76.47 per cent., secured parallelism; 11 of which latter cases, or 32.35 per cent., secured single binocular vision, and 2, or 5.88 per cent., binocular vision. Five cases, or 14.70 per cent., had over-effect, and 3 cases, or 8.82 per cent., had under-effect. After two operations on two cases of over-effect, and on one case of under-effect two of these cases secured parallelism, making the percentage as follows: parallelism, 82.36 per cent.; over-effect, 11.76 per cent.; under-effect, 5.88 per cent.

2. Trans. Ophth. Soc. Unit. King., vol. xviii, 1898, pp. 17-47.
3. Ophth. Hospt. Reports (London), 1889.

The remaining cases of over-effect and under-effect are still under observation, and if it becomes necessary will be operated on a second time. In cases of over-effect the second operation is performed upon the opposite muscles to those which were first cut, and in the same way, that is, they are stretched and then cut. In one of the two cases of over-effect that was operated on a second time, advancement of the muscles first cut was performed, but it did not relieve the over-effect; while the other case that had the opposing muscles stretched and cut secured parallelism.

These 34 cases here reported, taken in connection with the 36 cases operated upon by Panas' method and reported by Dr. Roosa eighteen months ago, make 70 cases in all that we have observed sufficiently to report upon. Twelve of the cases that Dr. Roosa reported in 1899 and 1900 have been seen in the last month (May), and the others have been seen now and then since his report. In his first report there was one case of over-effect. The over-effect in this case has diminished until only about five degrees of divergence remains, though ten degrees was present originally. In one case a convergence has resulted, while in two other cases divergence has resulted —one of ten degrees and the other of twenty-five degrees, but this latter case was a complicated one, that is, there was a central opacity of the cornea in the squinting eye. In other words, in two cases the tendency was to divergence, while in two other cases it was towards convergence. Divergence, therefore, after Panas' operation is no more to be feared than convergence, judging by these cases operated upon eighteen months to two years ago.

The results on the whole 70 cases at the present writing are as follows: parallelism, 60 cases, 85.7 per cent.; over-effect, 7 cases, 10 per cent.; under-effect, 3 cases, 4.2 per cent.

[I may say, since compiling the tables of cases for this paper, I have operated on 6 other cases in the clinic, all of which secured parallelism and one single binocular vision. If we add these cases to the 70 here reported the number of cures would be about 87 per cent.]

In these cases it must be remembered that two operations were performed on only 3 cases, the desired effect being obtained by one operation together with non-operative treatment. And it is this very feature of the operation, its effectiveness on one trial, which makes it superior to other operations. To show the value of this operation as to ultimate results it is only necessary to compare it with results obtained by the old methods of simple tenotomies, advancements, etc.

In 1886, Roosa reported a series of 100 cases of convergent strabismus, which he had operated upon, with results obtained, together with the review of the subject of squint. In this paper he said he had been able, after careful search, to find tables comprising a scant 300 cases. Of the 100 cases he operated on parallelism was secured in 79 cases, or just 79 per cent.; convergence remained in 16 per cent.; divergence in 4 per cent., and upward squint in 1 per cent. That is to say, 21 per cent. were failures although he operated on some of the cases two or three times, and stated that in some cases, not included in his tables, he had operated four and five times on a single case. His results in these 100 cases are a fair average as compared with the results obtained by other operators who used the same method. The results obtained by the same operator and his pupils by Panas' method are considerably better, and are secured in the great majority of cases, as observed earlier in this

TABLE 1.—RESULTS OF NON-OPERATIVE TREATMENT IN FORTY-SIX CASES TESTED UNDER A MYDRIATIC.

No.	Date, Name, Age (years).	Diagnosis.	Deg.	Fixation.	Duration.	Vision and Refraction.	Treatment.	Results.
1	Jan., 1900, G. L., 3½	Convergence, constant, left	20	False	Since 8 months old.	Objective tests; R. H. 3 D., L. H. 4 D.	Atropin, exclusion pad, glasses, +2.75, R.; +3 50 L.	May, 1901; convergence 10°; has not worn glasses all the time or followed other treatment steadily.
2	March, 1900, M. F., 3½	Conv., const. some nystag.	20	True	Unknown	Objective tests; H. 1 D. each	Glasses, pad; atropin intolerable.	May, 1901; convergence 5°.
3	Oct., 1900, H. G., 25	Conv., period. l	10	"	23 years	R. 20/20w. +1.25 D.; L. 20/20w. +1.50 D. +1.25 C. 105°	Glasses, pad, stereoscope	Single bin. vis. after 2 weeks, which holds May, 1901.
4	Feb., 1901, A. H., 5	Convergence, constant, left	30	"	1 year	Can not read; objective H. 2 D., R. C. H. Astg., L. 1 50 D. 50 C. 75°.	Glasses, atropin, pad.	May 5, 1901; patient gave up all treatment after first week because of illness; squint same as at first, 30°.
5	Jan., 1900, E. P. O. B., 18	Divergence, alternating.	5	"	1 year	R. 20/50; 20/10w. −.75 D ⊃ −.50 C. 165°, L. 20/50; 20/10 w. −1 D. ⊃ 50 C. 15°.	Glasses, stereoscope	May, 1901; condition unchanged; gave up all treatment after 3 months
6	June, 1900, M. C., 30	Diverg., const left.	15	"	Unknown	R. 20/200; 20/40w. −5.50 D. ⊃ −1.50 C. 45°; L. 20/200; 20/50w. −5 50 D. ⊃ 2 50 C. 45°.	Glasses, pad, stereoscope, declined operation.	Slight improvement.
7	June, 1900, J. Y. B., 29	Diverg., alter.	5	"	Unknown	R. 20/15; 20/15 +w. +1. D., L. 20/15; 20/15 +w. +1. D.	Tonics, stereoscope	One month later single bin. vis.; not seen since.
8	Sept., 1900, H. M., 28	Div., per., alt.	5	"	Unknown	R. 20/20; 20/20 +w. + 50 C. 90°, L. 20/20; 20/20+w. +.50 C. 90°	Glasses, tonics, declined opera	Mar., 1901; divergence 8°.
9	Oct., 1900, J. C. N., 35	Diverg., const	30	"	Since 4 yr. old; operat. 20 yr	R. 10/200; 20/200w. +4 C. 90°, L. 20/40; 20/20w. +1.50 D ⊃ +2 C. 90°.	Glasses, declined second opera	Condition unchanged.
10	Dec., 1900, M. A. S., 38	Diverg., alternating.	5	"	Unknown	R. 20/15; 20/10w. +.75 D., L. 20/15; 20/10w. +.50 D. ⊃ +.25 C. 90°.	Glasses, tonics, stereoscope	May, 1901; single bin. vis. all the time; no diplopia as before treatment.
11	Sept., 1900, A. B., 3	Conv., const. right.	5	"	4 years	R. 20/200; 20/200w. +1 D. ⊃ +3 C. 100°, L 20/30; 20/20w. +2 50 D. ⊃ 1.25 C. 85°.	Glasses, pad, atropin.	Oct., 1900; parallelism; 5, 14, 1901, parallelism, bin. vis.
12	Sept., 1900, J. G., 14	As above	20	"	12 years	R 10/200; 20/200w. 3+D., L 20/200; 20/30w. 2+D.	" " "	Oct. 11, 1900; eyes parallel for distance, but 5° conv. for near; not seen since.
13	Sept., 1900, N. M., 3	Conv., const l.	20	"	1 year	Objective tests; H. 3 50 each.	" " "	May 14; eyes parallel.
14	Sept., 1900, C. K., 6	Conv., const right.	40	"	5 years	Objective tests; R. +2 D. ⊃ +3 C. 75°, L. +2 D. ⊃ +3 C. 105°.	" " "	May 14, 1901; conv. 35°; has not followed treatment; advised operation.
15	Sept., 1900, A. C., 20	As above	20	"	Since a baby	R. 20/40; 20/20w. +1 D. ⊃ +.50 C. 90°, L. 20/50; 20/30w. +1 D. ⊃ +1 C. 105°.	" " "	Oct. 27, 1900; conv. 25°; saw but once after giving glasses.
16	Oct., 1900, A. B., 11	As above	15	"	7 years	R. 20/40; 20/20 w. +4.50 D. ⊃ +2 C 90°, L. 20/20; 20/20w. +4.50 D. ⊃ +.75 C. 90°.	" " "	May, 14, 1901; single bin. vis.
17	Oct., 1900, B. C., 12	As above	15	"	Since baby	R. 20/200; 20/70w. +2 C. 90 ⊃ −1 C. 180°, L. 20/100; 20/40w. +2 C. 75°.	" " "	Dec 18, 1901; conv. 10°; not seen since.
18	Oct., 1900, J. B., 17	Conv., const. left.	5	"	2 years	R 20/20; 20/20 +w. +2 50 D. ⊃ + 25 C. 180°, L. 20/200; 20/30w. +1 75 D. ⊃ +1 50 C. 180°.	" " "	Dec. 18, 1900; single bin. vis.; May 14, 1901; single binocular vision.
19	Oct., 1900, W. K., 10	Conv., const. right.	15	"	1 year,	Can not read; objective tests; R +7 D. ⊃ +1.50 C. 75°, L. +7 D. ⊃ +1 50 C. 105°.	" " "	Dec. 1, 1900; convergence 5°; not seen since.
20	Jan., 1901, W. McG., 6	As above	50	"	1 year	Objective tests; R. +2 D. ⊃ +2 C. 90°, L +2 D. = +2C. 90°	" " "	May 14; convergence 20°.
21	Feb., 1900, F. C., 13	Converg., periodic.	5	"	Since baby	R. 10/200; 20/70w. +2.50 D. ⊃ +4.50 C. 80°, L. 20/70; 20/50w. +2.50 D. ⊃ +4 C. 80°.	Glasses	May 16; eyes parallel; binocular vision.
22	Feb., 1901, M. O'N., 11	Conv., altern'g 5	15	"	Since baby	R. 20/20; 20/20 +w. +1.25 D., L. 20/20; 20/20+w. +1.25 D.	Glasses, pad, atropin.	May 16; convergence 5°; sursumvergence 5°.
23	Feb., 1901, J. S., 8	Conv., const right	20	"	4 years	R. 20/50; 20/40w. +2D. ⊃ +2 50 C 90°, L. 20/50; 20/40w. +2 D. ⊃ + 2.50 C. 90°.	" " "	May 2; convergence 5°.
24	Feb., 1901, B. S., 3½	Conv., const. l.	40	" with effort	6 months	Objective tests; +4 D. each eye	" " "	April 30; convergence 25°.
25	Feb., 1901, J. K., 5	Conv., const. r	15	True.	2 days.	Objective tests; R. +3 D., L. +2.50 D.	" " "	May 2; parallelism.
26	Feb., 1901, T. L., 3	Conv., altern'g	20	"	8 months	Objective tests; +3.50 D. each eye.	" " "	May 16; parallelism.
27	March, 1901, L. L., 4	Conv, const l.	15	"	8 months	Objective tests; +2 50 D. ⊃ + 1 C. 90°, +2 D ⊃ +1 50 C. 90.	" " "	May 16; convergence 10°.
28	March, 1901, J. B., 7	Conv., nystagmus.*	5	False	Since birth	R 20/200; 20/70w. +4 D., L. 4/200; central choroiditis and myopia 8 D.	Atropin, glasses, +4 D. R., plain left.	May 14; parallelism, both uncovered and with glasses on; left convergence 50° when right is covered.
29	March, 1901, F. R., 7	Conv., const. l.	10	True.	1 year	Objective tests; +6 D. each eye.	Glasses, pad, atropin	May 16; parallelism; single binocular vision.
30	March, 1701, M. G., 5	As above	15	"	4 days.	Objective tests; R. +1.75 D., L. +2.25	" " "	May 16; parallelism.
31	March, 1901, E. H. 9	Conv., periodic		"	Since a baby	R. 4/200; 20/100w. +7 D., L. 7/200; 20/50w. +7 D.	" " "	May 16; parallelism; single binocular vision.
32	March, 1900, B. J., 18	Conv., const. l.	15	"	13 years	R. 20/50; 20/30w. +4.50 D. +.50 C. 90°, L. 12/200; 20/100w. +3 D. 50 C. 90°.	" " "	May 24, 1900; convergence 2°.
33	March, 1900, M. W., 13	As above	10	"	7 years	R. 20/200; 20/30w. +2.50 D., L. 15/200; 20-70w. +1.50 D. ⊃ +4 C. 75°.	" " " bar-reading	May, 1900; eyes parallel; May, 1901; eyes parallel; single binocular vision.
34	March, 1900, A. C., 3	Conv, const. r.	40	"	1 year	Object tests; R. H. 6 D., L. H. 5 D.	Glasses, pad, atropin; atropin discontinued on acct. of poisoning	June, 1900; convergence 5°; not seen since.
35	April, 1900, E. M., 10	As above	15	"	2 years	R. 20/100; 20/70w. +3 D. ⊃ + 2.50 C 90°, L 20/100; 20/40w. +3.50 D. + 1 C. 90°	G., pad, bar-reading, stereoscope	May 8, 1901; sing. bin. vis. distance, not for near.
36	May, 1900, E. S., 7	As above	30	"	4 years	R. 20/200; 20/200w +4 50 D, L 20/30; 20/20w. +3.50 D.	Glasses, pad, atropin	After 1 month conv. 15°; not seen since.
37	May, 1900, A. G., 9	Conv, const l	40	"	8½ years	R. 20/30; 20/30w. +3 D +1 C. 75°, L. 20/40; 20/40w. +2 D. +4 C. 100°.	" " "	Aug. 23, 1900; convergence 30°; not seen since
38	May, 1900, R. S., 3½	Conv., const l.	15	"	1 month.	Objective tests; R. H 3 D, L. H. 4 D	" " "	Mar. 4, 1901; eyes parallel.
39	July, 1900, R. H., 4	Conv, altern'g	10	"	3 months	Objective tests; R. H. 3. D, L. H. 3 50 D.	Glasses, atropin	Eyes parallel after 3 mos for distance; not seen since.
40	July, 1900, J. O. C., 12	Conv., alt.; usually squints r.	45	"	Since an infant.	R. 20/50; 20/30w. + 75 D. +1 50 C. 90°, L. 20/20; 20/20w +1.25 D. +75 C. 90°.	Atropin, pad, glasses, bar-reading, stereoscope	Aug 28, 1900; parallel for dist., 5° conv. near; Oct. 11, sing. bin. vis.; May 11, 1901, sing bin. vis for all dist.
41	March, 1901, M. B., 6	Conv, const ,l.	15	"	2½ years	Objective tests; R +3 D. + 50 C. 90°, L. +3 D. +1 C. 90°	Glasses, pad, atropin.	May 16; parallelism; binocular vision.
42	March, 1901, M. B., 16	As above	15	"	7 years	R 20/30; 20/20w. +3 D., L. 20/100; 20/70w. +3.50 D.	" " "	May 20; parallelism.
43	June, 1900, L. McG., 12	Divergence, alternating.	12	"	2 years	R 20/20; 20/.0w. 6 D. - 1 50 C. 170°, L. 18/200; 20/50w. 6 D. 2 C. 15°.	Glasses, stereoscope	May, 1901; divergence 8°; seen but twice.
44	July, 1900, L. P., 17	Diver., const., left.	5	"	4 months	R. 10/200; 20/20w. - 4 50 D, L. 5/200; 20/20w. - 9 D	Glasses, pad, bar-reading, stereoscope	May 14, 1901; single bin. vis. with glasses, 5° divergence without.
45	Oct., 1900, M. F., 6	Diver., cons., r.	10	"	Unknown	Objective tests; R. - 3 D., 3 C. 15°, L. 2.50 C. 165	Glasses, pad	May 14, 1901; divergence 2°.
46	Sept., 1900, J. H. C., 28	Conv., cons., l.	5	"	Since a baby	R. 20/40; 20/20w. +5 50 D., L. 20/200; 20/70w. +5.50 D	" " "	Unimproved.

* When right is covered left converges 50°. Both uncovered perimeter shows 5° convergence left.

TABLE 2.—RESULTS OF PANAS' OPERATION COMBINED WITH NON-OPERATIVE TREATMENT IN THIRTY-FOUR CASES.

TABLE 2.—RESULTS OF PANAS' OPERATION COMBINED WITH NON-OPERATIVE TREATMENT IN THIRTY-FOUR CASES.

No.	Date, Name, Age (year).	Diagnosis.	Degree.	Fixation.	Duration.	Vision and Refraction. Under Atropin.	Treatment.	Results.
1	Sept., 1900, H. C. K., 23	Convergence constantly left.	60	True	Since a baby	R. 20/70;20/20w. +1.50 D., L. 20/200;20/100 +w. +1.50 D ⊃ +2.50 C. 105°. Objective tests, R. H. 3 D., L. H. 2 D	Atropin, glasses, pad, Panas' operation, stereoscope, bar-reading	Triplopia immediately after; 6 weeks later single bin. vis.; V. 20/40 in squinting eye.
2	Sept., 1900, A. McC., 4.	Convergence constantly right.	40	"	Since a baby		Atropin, glasses, pad, Panas' operation	Over-effect 15° immediate; 2 weeks later parallelism, which holds April, 1901
3	Nov., 1900, B. J., 10.	Convergence constantly left.	35	"	5½ years	R. 20/70;20/50w. +2 D. ⊃ 1.50 C. 80°, L. 20/200; 20/100w. +2 D. ⊃ +1.50 C. 105°.	Glasses 15 mo. altogether, pad, atropin, Panas' opera.. stereosc pe, bar-reading	Immediate effect 5° divergence; after 1 day single bin vis, which holds April, 1901.
4	Jan., 1901, T B, 22	Conv. and sursumver. const. left.	30	"	15 years.	R. 20/100 20/20w. +4 D. ⊃ +.75 C. 35°, L. 2/200; 20/50 w. +4.50 ⊃ +.75 C. 125°.	Glasses, pad, atropin, Panas' operation, stereoscope.	Immediate effect, diver. 20°, sursumvergence 25°; May, 1901, sing. bin. vis. for distance, not near point.
5	Apr. 13, 1900, I. I., 15.	Divergence alternating.	5	"	6 months	R. 20/20;20/20 +w.+.75, L. 20/20;20/20 +w. +1 D.	Tonics, glasses, Panas' opera, Dec. 13.	30° over-effect at first; single binocular vision 6 weeks later, and still holds.
6	Dec. 5, 1898, L. J. B., 30	As above	15	"	Since a child	R. 20/15 —w. +.25 D. ⊃ +25 C, 180°, L. 20/15 — w. +.25 D. ⊃ +.25 C. 180°.	Glasses, Panas' operation Jan. 23, 1901	20° over-effect at first; single binocular vision 4 months later, holds.
7	Mar. 29 1900, N. V., 8.	Convergence constant left	20	"	2 years	R. 20/70;20/20w. +3 D. ⊃ +.75 C. 90°, L. 20/200; 20/40 w. +1 D. ⊃ +2 C. 90°.	Glasses, pad, atropin, reduced squint to 15° Aug. 31; Panas' operation.	Immediate over-effect 20°; Oct. 6, over-effect 10°; April 20, 1901, over-effect 10°; to be operated on again.
8	June 29, 1900, W. D., 25	As above	20	"	20 years	R. 20/20;20/20w. +2 D. ⊃ +1.25 C. 90°, L. 20/30; 20/20w. +3.50 D. ⊃ +1 C. 180°.	Glasses, pad, atropin, Panas' operation July 11.	Parallel at once; single binocular vision; same 8 months later.
9	July 5, 1900, A. S, 6.	As above	25	"	1 year	R. 20/200;20/20 —w. +3 D., L. 10/200;20/200w. +3.50 D. [C 75°.	Glass, pad, atropin, reduced squint to 15°; Jan. 16, 1901, Panas' operation	Parallel at once; single bin. vis.; Mar. 23, 1901. sing. bin. vis.; vision 20/20 in each eye.
10	Dec, 1900, J. C, 19	Diver. cons. right.	20	"	Since child	R. 4/200;20/70w. —11 D., L. 20/70;20/20w. —.50 D. 75	Glasses, pad, Panas' operation.	Immediate over-effect 30°; April, 1901, parallelism.
11	July, 1901, E. S., 11	Diver. preferably; mostly right eye	30	"	10 years	R. 20/70;20/20w. —1.50 D., L. 20/40 20/20w. —1 D.	Glasses, Panas' operation, July; also in November on same muscles	Immediately after 2d opera, diverg. 10°, but homo. diplopia 6°; May, '01, sing. bin. vis. with or without glasses.
12	Dec., 1900, W. T., 16	Divergence constant left.	25	"	Since a baby	R. 20/20;20/15w. +.75 D., L. 20/30;20/30 +w. +.75 D.	Panas' Operation.	Immediate over-effect 20°; 1 week later sing. bin. vis, which holds, May, 1901, without glasses; patient has angle alpha 20°, giving appearance of divergence.
13	May, 1900, A. G., 9	Convergence constant left.	40	"	8½ years	R. 20/30 20/30 +w, +3 D, ⊃ 1 C +75°, L 20/40; 20/40 +w, +2 D ⊃ +4 C. 100°.	Atropin, glasses, Panas' operation	October, 1900, parallelism.
14	June, 1900, J. B., 1½	As above	60 Rt 15 Lt.	False	Since 1 mo. of age.	Objective test. R. H 5, L. H. 4	Atropin, Panas' operation	Parallelism immediate after operation, which held for a month; not seen since.
15	Oct., 1900, J. K., 4.	As above	35	True	Since a baby	Can not read objective tests, H. 4 D. each; ordered +3.50 D. each.	Glasses 10 months before I saw her; atropin, pad, Panas' operation.	Immediate effect 5° conv.; patient stopped all treatment 2 weeks after operation, not wearing glasses even; May, 1901, conv. 10°.
16	Mar, 1900, A. D., 38	Convergence constant right.	60 Lt. 10 Lt.	False right	12 years	R. 3/200 not imp., L 4/200;20/50w. —12 D. ⊃ 1.50 C. 180°.	Glasses, R —10 D., L. —10 D. ⊃ 50 C. 180°, pad, Panas' operation.	May 8, 1901, R. V. ⊃ 20/50, L. V. = 20/50; single binocular vision.
17	Apr. 1, 1900, J, S., 5	As above	50	False	3 years	Objective tests, H. 5 50 D each eye	Panas' operation April, 1900; again Mar., 1901.	Over-effect 10°, which remained till March, 1901, when Panas' opera. on external recti; May, 1902, eyes paral.
18	Apr., 1900, J. B., 23	Convergence constant left.	60	True	20 years	R. 20/200;20/20w +5.50 D ⊃ +1 C. 90°, L. 2/200; 20/200w. +5 50 D. ⊃ +2 C. 105°.	Glasses, atropin, pad, Panas' operation.	May 31, 1901, parallel for distance, 5° convergence for near point.
19	May, 1900, C. J., 5.	convergence constant right	20	False	4 years	Objective tests, R. unclean cataract, L. Hastig Co., nystagmus.	R. plain glass, L. +2 D. ⊃ +2 C. 90°; atropin, Panas' operation.	May, 1901, eyes parallel.
20	Aug., 1900, D. P., 16	Conv. cons. left.	30	"	Unknown	R. 20/30;20/20w. +2.50 D., L. 3/200;3/200w. +3 50 D.	Glasses, pad, atropin, Panas' operation.	Aug. 25, 1900, eyes parallel.
21	Aug, 1900, C. H., 10.	As above	25	True	5 years	R. 20/70;20/40w. +2.50 ⊃ +2 C. 70°, L. 20/200;20/200 w. +2.50 ⊃ +2 C. 105°.	As above.	May 14, 1901, single binocular vision with and without glasses.
22	Sept., 1900, S. M., 13	As above	35	"	Since a baby	R. 20/200;20/30w. +6 50D., L. 20/200;20/30w. +7 D.	Atropin, pad, glasses, Panas' operation by Dr. Maneor (house surgeon).	Immediate effect after operation, conv., changed to divergence 30°; advanced both internal recti, one after the other; conv. 15°; ultimate diver. 10°.
23	Sept, 1900, T. G., 6	Convergence con stant right	20	"	Since a baby	Objective tests, H. 3 D. each	Atropin, pad, glasses, Panas' operation.	Immediate over-effect 30°; April 23, 1901, parallelism; May 14, 1901, parallelism.
24	Oct., 1900, E. H., 17.	Convergence constant left.	35	"	Since a baby	R. 20/200;20/30w. +4 D. ⊃ +2 C., 75°, L. 15/200; 20/70w. +4 D. ⊃ +2 C. 105°.	" " " " "	May 14, 1901, binocular vision.
25	Oct., 1900, M. G., 22	Convergence constant right.	25	"	Since a baby	R. 20/70;20/40w. +1.50 D. ⊃ + 3 C. 80°, L. 20/40; 20/30w +1 50 D. ⊃ + 3 C. 105°.	" " " " "	April 3, 1901, eyes parallel.
26	Oct., 1900, A. F., 10	Convergence constant left.	60	"	7 years	R. 20/20;20/10w. +1.25 D., L. 2/200;4/20w. +3 C. 90°.	" " " " "	Parallelism.
27	Sept., 1900, W. G, 4	Convergence constant right.	30	"	2 years	Objective tests, R. +2.50 ⊃ +3 C. 105°, L. +2.50 ⊃ +3 C. 75°.	" " " " "	Dec 8, 1901, convergence 10°; not seen since.
28	Oct., 1900, E. N, 7	As above	40	"	3 years	R. 20/100;20/70w. +3.50 D. ⊃ 2.50 C. 75°, L. 20/70; 20/30 +5 D.	" " " " "	May 18, 1901, eyes parallel; single binocular vision.
29	Oct., 1900, E. B., 15	As above	60	False	12 years	R. 3/200;10/200w. +3 D ⊃ +1.25 C. 75°, L. 20/20; 20/20 +w. +3 D ⊃ +1.25 C. 120°.	" " " " "	April 18, 1901, eyes parallel.
30	Nov., 1900, M L., 9	As above	15	True	7 years	Can not read objective tests, R. +4 D. ⊃ +50 C. 90°, L. +4 D. ⊃ +.50 C. 90°.	" " " " "	May 16, 1901, parallelism distance; 5° conv. near.
31	Jan., 1901, M. K, 6	Convergence constant left.	20	"	3 years	Can not read objective tests, R. +2.50 D. ⊃ +.50 C. 105°, L. +2.50 D. ⊃ +1.50 C. 90°.	" " " " "	Immediate over-effect 20°; May 14, divergence 10°.
32	Feb., 1901, M. C., 11	Convergence constant.	25	False	7 years	R. 4/200;2/200w. +2 D. ⊃ +.75 C. 75°, L. 20/20; 20/20 +w. +1.50 ⊃ + 75 C. 105°.	" " " " "	May 16, divergence 10°.
33	Mar., 1901, D. P., 25	Conv. both eyes; head carried to l.	40 Rt. 10 Lt.	"	Since a baby	R. 3/200;3/200w. +2.50 D., L. 20/50;20/20w. +.75 D. ⊃ +25 C. 90°.	" " " " "	May 16, parallelism.
34	June, 1900, E. H., 4	Conv. constant.	"	"	Since baby	Objective tests, +.75 C. 90° each.	Glasses, Panas' operation	Parallelism without glasses; binocular vision.

TABLE 3.—RESULTS OF SIMPLE TENOTOMIES COMBINED WITH NON-OPERATIVE TREATMENT IN THREE CASES.

1	Sept., 1900, N. H., 20	Convergence constant left.	5	True	Since a baby	R. 20/40;20/20w. +1.50 C. 90° —.50 D., L. 20/200; 20/70w. +2.50 C. 90°.	Had 3 or 4 operations before coming to me; atropin, glasses, pad, stereoscope, bar-reading.	After 5 weeks' treatment single binocular vision, which still holds, May, 1901.
2	Nov., 1900, L. B. L., 30	Convergence constant right.	5	"	27 years	R. 20/200;20/30w. +1.50 D. +1 C. 95°, L. 20/70; 20/15w. +.75 D. +1 C. 90°.	Operation, both eyes, at 8 yr. by another surgeon, glasses; by me, new glasses, pad, stereoscope, bar-reading.	One week, single binocular vision, which holds May 8, 1901; perfect comfort.
3	Sept., 1900, H. F., 17.	As above...	25	"	15 years.	R. 20/70;20/20w. +3 D., L. 20/70;20/20w. +3 D . .	Had 2 oper' 3 yr. ago, atropin, pad, glasses	May 14, 1901, eyes parallel; binocular vision.

paper, by one operation, which is certainly a great gain over the method of simple tenotomies, where two, three and as high as five operations are sometimes necessary to complete a cure. Furthermore, the main objections against Panas' operation, over-effect, has not been borne out by the statistics in the 70 cases reported by us and the 250 cases reported by Panas. Panas reports failure in only about 5 per cent. of his cases.

By way of explanation of the greater percentage of failures in the cases reported by Roosa and myself, as compared with the cases reported by Panas, I may say three of our cases were operated upon while the patients' eyes were under the influence of a mydriatic. In each one of these three cases over-effect resulted, due, we believe, to the effect of the mydriatic. Under no circumstances should Panas' operation be performed while the eyes of the patient are under the effect of a mydriatic. Because, immediately following Panas' operation, as a rule, we have a temporary over-effect, and the mydriatic increases it and makes it permanent. It is easy enough to instill a mydriatic if the effect of the operation is not great enough, but it is impossible to get rid of the effect of the mydriatic, for some days at least, when once in. We therefore give word of warning to those who intend to operate after Panas' method not to do so while the patient's eyes are paralyzed with a mydriatic.

In a very few cases a second operation is called for, but with this second operation I believe the percentage of cures (parallelism) will easily be brought up to 95 per cent. in all cases.

Cases Worthy of Special Mention.—Cases Nos. 1 and 8 are remarkable in showing triplopia immediately after operation; the former case being of interest also by reason of the vision in the amblyopic eye increasing from 20/200 to 20/30.

Each of these cases, aged respectively 23 and 25 years, had excessive convergent squint in the left eye from youth, the latter case having but little amblyopia in the squinting eye, while the former had a very decided amblyopia. In each case immediately following the operation there was horizontal triplopia for the near point, and for the distance also for bright objects, as a candle-flame. The second case, No. 8, in the first table, would at times have triplopia, then diplopia and then single binocular vision—all within a few minutes' time. When triplopia was present the image from the right eye was between the two images from the left, and was the brightest of the three, while the extreme right hand image was the faintest of the three. When diplopia was present (in this instance the images from the maculæ were fused, forming one image, while the faint image to the right was from the new-formed macula in the left eye) left image was very bright while the right was very weak.

It required the most favorable surroundings to bring out the triplopia, as a bright light in a dark room. Looking at a white door-knob at twenty feet immediately afterward, he had single binocular vision as shown by prism test.

With the Kroll pictures, the trap and the mouse, for instance (the trap being on the left side of the picture in front of the squinting eye), he saw two traps and the mouse between them. After two days triplopia could not be brought out, and single binocular vision existed from this time on until eight months later when the patient was last seen.

The first case, No. 1, was exactly like the one just recited, except the image from the false macula was weaker. Furthermore, on account of his amblyopia it required a much longer time for him to obtain single binocular vision, taking five weeks to establish it. At first he saw single at five feet and then single binocular vision extended to within one foot of the eyes and as far away as ten feet after a few weeks. Beyond ten feet he had homonymous diplopia, while inside of one foot he had cross diplopia. Five months after the operation the range of single binocular vision was from eight inches to fifteen feet, and he was able with the Kroll pictures to put the mouse in the trap, the flower in the pot, the frog in the pool, etc., but not to fuse the homologous objects of the Kroll pictures, as the two girls or two horses, so as to form one girl or one horse. His vision in the amblyopic eye had increased to 20/50, at this time. One month later the vision in the bad eye increased to 20/40, and single binocular vision existed for all distances beyond six inches. He was able also now to fuse the homologous objects of the Kroll pictures.

A third case somewhat similar to the two case here reported is one from the hospital clinic where paradoxical diplopia followed operation. E. S., aged 11 years, divergent strabismus, 30 degrees, constant most of the time in the right eye, though occasionally the left eye squinted; duration 10 years.

R. V. 20/70; 20/20 w. —1.50 D.
L. V. 20/40; 20/20 w. —1.00 D.

The treatment consisted in wearing glasses and having Panas' operation performed. Immediately after the operation there was a divergence of ten degrees, but a homonymous diplopia of six degrees. Ten months after operation the patient had single binocular vision both with and without glasses.

The three cases just cited and the two to follow form other links in the chain of positive evidence in favor of amblyopia ex anopsia, but before commenting on them I will cite the two cases in hand of marked amblyopia which were greatly improved by treatment.

A. S. (Case 9 in Table 2), aged 6 years, convergence 25 degrees, constant in the left eye, duration one year, true fixation, R. V. 20/30; L. V. 10/200. Under atropin:

R. V. 20/100; 20/20— w. +3.00 D.
L. V. 10/200; 20/200 w. +3.50 D.

These glasses were ordered and the exclusion pad to be worn one hour three times a day over the right eye; also atropin was instilled twice a day into the eyes for a month at a time with intermissions of a month. After three months the amount of the squint was reduced to fifteen degrees, but could not be further improved with three more months of treatment, making six months of all of non-operative treatment. Panas' operation was now performed. On the following day the eyes were parallel, and on the second day after operation single binocular vision was present for the near point. The exclusion pad was ordered to be worn one hour three times a day on the right eye; three months later single binocular vision existed for all distances with vision 20/20 in each eye with glasses, + 3 D. each. Adduction 13 degrees, abduction 6 degrees, sursumduction, right and left, 3 degrees.

Another case in point, No. 16, Table 2: Ada D., age 38, high myopia, convergence 60 degrees right eye, with false fixation, 10 degrees convergence left eye; duration twelve years. R. V. 3/200 not improved; L. V. 4/200; 20/50 w. —12 D. ⌒ —1.50 C. 180°.

The ophthalmoscope showed 12 diopters of myopia in

each eye, with normal fundi, except for small scleral ring at the disk in each eye. Ordered glasses —10 D. R.; and —10 D. ⌒ —1.50 C. 180 L. Two weeks later Panas' operation was performed; five days later the eyes were parallel. The patient was ordered to wear her glasses all the time and to wear the exclusion pad on the left eye twice a day for an hour. Thirteen months later the patient had single binocular vision with glasses on, and the vision had increased in the amblyopic eye from 3/200 to 20/50, the same as in the good eye.

The two cases of triplopia and the one case of paradoxical diplopia show that a new perceptive center can be formed in the eye by use, while the last case shows that the center of vision, after it is much reduced, can be improved by use. And Roosa, Risley and others have reported cases where the vision was good before squinting and became reduced after squinting, showing that the vision may be reduced by non-use.

I am as firmly convinced that the non-use of an eye may cause weak vision or amblyopia as the non-use of a man's arm causes weak muscles in the arm. Physiologically one is as easily understood as the other. A quotation from Brudenell Carter is pertinent here: "Vision," he says, "like every other nerve function, must be cultivated for the attainment of a high degree of excellence. The visual power of London children is not cultivated by their environment. They see the other side of the street in which they live, and the carts and omnibuses of the thoroughfares. They scarcely ever have the visual attention directed strongly to any object which it is difficult to see or which subtends a visual angle approaching the limits of this ability; and hence the seeing function is never exerted to anything like what should be the extent of its powers."

Three of the patients reported by me in this paper have complained that the sight in the good eye has been made worse by tying the eye up, it taking at least one-half hour to one hour to recover the normal vision after the patch is removed.

Case No. 12, in Table No. 2, is unique because of the great size of angle alpha, which was 20 degrees in each eye, measured very carefully with the perimeter, time and again.

W. H., aged 16, left eye has always turned outward, mother and two sisters have divergent squint when they become tired. The amount of divergence is 25 degrees, exclusive of the angle alpha, but it looks much greater on account of the very large positive angle alpha.

R. V. 20/15; 20/15 + w. +.50 D.

L. V. 20/50; 20/30 + w. +.50 D. ⌒ +.50 C. 75°.

Panas' operation was performed at once because the glasses had a tendency to make the squint worse. The immediate effect of operation was ten degrees of convergence; nine days later the eyes were parallel with single binocular vision for all distances. His wide angle alpha, however, gave him the appearance of having divergent squint, the so-called incongruous squint of Donders, or apparent squint of other writers. Six months later the patient had single binocular vision by all tests, with and without glasses, and was entirely comfortable, although he had not worn his glasses for two months.

So far as my knowledge goes a 20-degree angle alpha is the largest on record. Cases of as high as twelve degrees have been reported, but I knew of none larger until meeting with this one.

Another case worthy of report is the following: J. C., aged 12, convergence of the right eye since an infant, constant; amount 45 degrees, true fixation.

R. V. 20/50; 20/30 w. +1.50 D. ⌒ +1.50 C. 90°.

L. V. 20/50; 20/20 w. +2.75 D. ⌒ +.75 C. 90°.

These glasses were ordered together with atropin and the exclusion pad. Five weeks later the eyes were parallel for the distance with five degrees of convergence for the near point. After three months' treatment single binocular vision was present, which is still maintained. This case is remarkable because of the amount of the squint—45 degrees, the age of the patient before treatment was begun—12 years—the duration, twelve years, and for the result.

CONCLUSIONS.

1. That it is desirable that we have a uniform or standard set of tests for the accurate measurements of strabismus.

2. A better understanding of the physiological action of the ocular muscles and of physiology in general, than at present obtains, should be had by those treating and operating on strabismus cases.

3. The amblyopia present in most cases of convergent strabismus is functional and acquired, and not congenital except in rare cases.

4. The non-operative treatment of strabismus—atropin, the exclusion pad, and, in patients old enough, glasses, the stereoscope and bar-reading—should be begun as soon as the squinting is observed; for, it is in the early cases that this form of treatment is capable of doing so much good. By means of it, if the case is taken in time, false fixation and suppression of the image in the squinting eye are prevented, fusion of the images encouraged, and form-perception, that is, true binocular single vision often maintained. Even where one or more of these functions have been lost persistent effort in the non-operative method of treatment frequently restores them.

5. About 30 per cent. of all cases of strabismus may be cured by non-operative treatment alone.

6. Just as soon as the non-operative method of treatment ceases to improve the condition of the squint, it is time to operate. Delay in operating after this is not only useless but harmful, because the habit of suppressing the image in the squinting eye becomes fixed and the amblyopia worse.

7. After the eyes have been operated on, the use of the stereoscope, bar-reading, the pad, glasses, etc., are of the utmost use in completing the cure.

8. Panas' method of operating for strabismus by stretching the muscles before cutting them is to be recommended as safe in execution, quick in results and efficient. It should never be performed while the patients' eyes are under the influence of a mydriatic.

DISCUSSION IN SYMPOSIUM ON STRABISMUS.*

DR. C. M. CULVER, Albany, N. Y.—The English word "cured" has different meanings as used by different persons. With any meaning of it, strabismus is not, generally, cured by operation. We must have the non-operative treatment before an operation, and afterwards in order to be fair to our patients. When I was invited by Dr. Ellett to participate in the discussion of this subject I was asked to discuss Dr. Jackson's paper concerning the non-operative treatment and therefore my notions concerning the matter are correlated with reference to that. The operation for strabismus provides a condition wherein the trouble may be cured; it does not cure it. It is like the operation for talipes in that respect. Gladden has pointed out that because a person is not a total abstainer it is not fair to assume that he is a confirmed drunkard, and

* For the previously published papers on this subject see THE JOURNAL, October 26, pp. 1087-94, and November 2, pp. 1165-72.

because one advocates non-operative treatment of strabismus it does not follow that he is never in favor of the operative treatment. The opportunity that I had to study this question was encountered during eighteen months of study in Dr. George T. Stevens' office. I have not been quite faithful to that training, for I have never done more than five operations on one case of strabismus. The non-operative treatment should consist in whatsoever can induce the eyes to coöperate in securing binocular vision. It seems to me it is very like teaching a child to walk and for this purpose the apparatus Dr. Jackson shows seems to me most commendable.

DR. F. C. TODD, Minneapolis—In regard to the objections to the non-operative treatment and the reason it can not always be carried out is because of the length of time necessary, and yet it seems to me the patients should be as willing to subject themselves to the non-operative treatment as to the frequent operations recommended by some authorities. There is one important point which Dr. Jackson mentioned which I wish to emphasize and which should always be carried out. I refer to the correction of the entire ametropia in the amblyopic or squinting eye; this can only be done by subjective means. This is often neglected I am sure from the number of such cases I find who are wearing only a spherical correction when a compound glass is required to produce the correct focus. If we may judge from the literature a procedure upon the subject, tenotomy is doubtless performed more often than advancement; yet the latter is steadily gaining ground. The amount which Dr. Clark stated, as secured by a tenotomy, seems to me to vary a great deal under different circumstances. One operator that I have seen work is in the habit of stretching the tendon and tissues after tenotomy and in that way an excessive amount may be corrected. The operation of tucking is one I have been performing in the past two years, and with an instrument which I have devised for the purpose great accuracy can be secured; if extra guy sutures are used a high degree of strabismus may be corrected in one operation. Dr. Davis' results certainly show the benefits of Panas' operation. Stretching of the tendon, as he described it, seems to me at first a radical procedure, but I can see that it is more conservative in its results than tenotomy without stretching, because while more marked at first the tendon being lengthened from the previous stretching necessarily takes its attachment further forward on the globe and thus, as Dr. Davis suggests, the best results are secured with this operation in strabismus of small degree.

DR. G. C. SAVAGE, Nashville—There are three terms to be used in connection with the muscle study. These terms are: planing, converging and paralleling. The first two terms are always to be applied to the visual axes; the superior and inferior recti plane them, and the internal and external recti govern the converging. The paralleling is done by the obliques, and has no reference whatever to the visual axes, for the lines that are to be parallel are the vertical axes. It is certainly incorrect to speak of paralleling the visual axes in operating for squint. In the study of squint we must investigate from the three standpoints: planing, converging and paralleling, and our operations must be determined accordingly. We must know beforehand whether there is an error in either one of these three directions, and we must see to it that our operations shall result in bringing the visual axes into the same plane, in giving ability to the internal and external recti muscles to do the proper converging in this plane, and to enable the obliques to always parallel the vertical axes of the eyes with the median plane of the head. While sometimes the error is only one of convergence, not infrequently there is also a failure on the part of the muscles to plane the visual axes and to keep the vertical axes parallel. The first operation done for squint was most likely done about one hundred and fifty years ago by a man named Taylor, and while we can not be positive as to the nature of that operation, I am inclined to believe that it was a division of the inferior oblique muscle. If Taylor, who traveled all over Europe straightening crossed eyes, had been honest with himself and mankind, he would not have kept his secret until his death. His operations were all done privately, and no one was allowed to see the eye until after the evidence as to the nature of the operation had entirely disappeared. I have done that operation myself recently with a high degree of satisfaction in a very bad case of squint, complicated by an extraordinary amount of plus-torsioning. I did this operation because I believed that Taylor, the quack, had done the same operation successfully. In my case I had no fear that the ends of the cut muscle would separate sufficiently to allow the great plus-torsioning to be transformed into minus-torsioning.

As to the kind of operation to be done, I have well-defined views in my own mind, and I put these views into practice. I do not follow Landolt in never doing a tenotomy, but always advancing the weak muscle; nor do I follow those who are in the other extreme, who do complete tenotomies, even severing the check ligaments, but do no advancements. I never do a complete tenotomy on a rectus muscle, but in all cases of squint I do a partial tenotomy of the too strong muscle and a shortening or an advancement of the too weak muscle at the same time. In doing the partial tenotomies I do not always divide the central fibers. If there is a torsioning of the eye complicating this squint, then the peripheral fibers in one direction or the other, depending upon the muscle, and the character of the torsioning, should be cut instead of a central tenotomy. In shortening or advancing a muscle we must always take into consideration the presence or absence of torsioning. If there is no complication of this character, then a muscle should be shortened or advanced in direct line of its original action; but if there is a complicating torsioning, the shortening or advancement must be such as to elevate or depress the plane of its action, as might be indicated. Of all the complete tenotomies that have ever been devised Panas' is certainly the safest and the best. By stretching the muscle before dividing the tendon the fibers are more or less paralyzed, and after cutting the tendon there is less retraction than would be if the fibers had not been stretched. Before these fibers have had time to regain their power, which was taken from them by the stretching, the cut tendon has had time to re-attach itself to the globe more advantageously than the attachment would have been if the retraction had been further back.

DR. E. F. BAKER, Mt. Vernon, N. Y.—For nearly twenty years I have been operating upon but very few cases of ordinary convergent squint. I have found that these cases can be otherwise cured more satisfactorily to the patient and to me. In order to follow up these cases and at the same time receive some compensation for it I have proceeded in a line that might be considered unethical. I found that if I charged $100 for the operation they were quite willing to pay it, but when they came back at the end of the year not much better I had to do the second operation without charge and if at the end of another year they were not improved they began to think the money should be returned. Now, I am in the habit of telling them that I am willing to take care of them for a considerable time and do the best I can and I name a sufficient sum to cover it. In this way I have been able to follow up my cases. In a paper read before the state society some years ago (and I quote these figures from memory), I said that of 105 cases managed in this way 85 were cured to the satisfaction of the patient and only 20 came to operation. I have followed the same plan as laid down by Dr. Jackson, and when the case does not do well and the squint is not corrected I always imagine that I have not done my part of the work well. The great trouble is that these patients do not come young enough. I frequently put glasses on patients at the age of 2 or 3 years and if they be made comfortable to the child there is no difficulty in managing the parents. I was somewhat surprised at the remark of one of the readers that cases of alternating squint were the most difficult. Why, I feel like saying always that these cases are curable.

DR. J. L. THOMPSON, Indianapolis—Most of our cases come from small towns where everybody knows us and we can not do things as they do in large cities; now I never operate on them until I think and talk it over with them for a year; sometimes they fall, in the meantime, into somebody else's

hands, and I never regret it at all. We must educate not only the public but the profession on this question, and tell physicians particularly what they may expect of operations done in two minutes. We should impress it upon physicians that they should not send these patients expecting immediate operation. I have offended several physicians by telling them that it is too serious a thing to do at the first office visit.

Dr. F. C. Hotz, Chicago—I believe there is no diversity of opinion as to the importance of the non-operative treatment of convergent strabismus in children. Dr. Thompson has struck a very good point in referring to the ignorance of the general practitioner in this regard. They send patients to us and expect an operation to be done in a minute or two and the parents are greatly disappointed when told that before operating a very minute examination is required to determine the advisability of operating. Now, when it comes to operation I wish to endorse fully one point made by Dr. Clark, that in every case of operative treatment we must divide the effect between the two eyes, whether you correct the convergence by tenotomy or advancement, so as to preserve the harmonious action of the muscles.

Now, I wish to say a word in regard to tenotomy which so far seems to have found so little favor with the gentlemen who have expressed their opinions. It is true that very bad results have been seen after tenotomies of the internal recti for convergent strabismus and that in after years we sometimes have been ashamed to see a patient whom we had operated on years before. But is the bad result the fault of the principle upon which the correction by tenotomy is based, or is it the fault of the operator? I think we should not throw overboard an operation which has its good points because many operators, myself included, have had bad results with it. If the convergent strabismus was the consequence of a faulty action of the externus, certainly the advancement of this muscle would always be indicated; but if it is the result of faulty action of the internus it is certainly not rational to leave the faulty muscle alone and produce an abnormal condition in the normal externus. That the internus is at fault originally is, I think, shown by the good results obtained with the non-operative treatment and also by the occurrence of an alternating strabismus. I can not conceive the possibility of an alternating strabismus due to weakness of the external muscle of one eye. In moderate cases of convergent strabismus of say 15 degrees measured by the perimeter—and I measure my cases by the perimeter—I am sure the internal rectus muscles carefully tenotomized to such an extent as to reduce the abnormal part of their converging power, but reserving the full degree of that power necessary to sustain convergence for near work, can be done with impunity. If the strabismus has lasted any length of time other conditions obtain and it is there that correction by simple tenotomy leads to such slipping back of the muscle that it loses so much of its converging power as to bring about the bad effects mentioned. In such cases advancement of the externi is required. I am standing, therefore, in this position, that I do tenotomies for slight conditions, advancement for middle cases, and combine the two in excessive cases. In alternating strabismus the simple tenotomies will do the work perfectly. I was greatly surprised to hear it stated that these cases were the most difficult to relieve by operations; on the contrary, I find them the most favorable for operative or non-operative treatment.

Dr. D. M. Campbell, Detroit, Mich.—The problem of strabismus varies largely with the kind that we have. If we have a converging strabismus the correction brings us problems vastly different from those applicable to post-operative divergent strabismus. In many cases of convergent strabismus it may be possible to correct by tenotomy, but none of us would have the temerity to say that post-operative strabismus would be corrected by a tenotomy of the external rectus. So before we can profitably discuss the question the different kinds of strabismus should be differentiated. Then again, in the complicated varieties, the convergence, associated with turning upward of one eye, presents different problems from the simple strabismus. None of us would expect to correct that by a simple tenotomy of the internal rectus; we must eliminate the complicating features of each case.

Dr. A. B. Hale, Chicago—I did not suppose the non-operative and operative advocates would become separated in the discussion; both methods must always be used together in order to obtain a cure. I have learned one valuable lesson by my experience with the stereoscope, namely, that binocular vision is not necessarily fusion. Binocular vision can be compared to exercises to which we subject a patient and expect him to go through with it so much at a time, while fusion is a condition to which normal eyes are accustomed. I want to ask Dr. Clark what material he uses in his buried sutures.

Dr. William Wilder, Chicago—It seems to me when the operative treatment of strabismus becomes necessary we should consider very carefully the question of whether one muscle is too strong or the opposing muscles too weak. It would be as absurd to cut a weak muscle in the eye as it would be to make a tenotomy in talipes caused by paralysis. That plan of treatment has been discarded in most cases by the orthopedists. If we find that the abductive power of one muscle is at fault we can proceed to strengthen it by advancement and in such cases I have been able to obtain excellent results by operating on one eye alone, although in many cases I do divide the operation between the two eyes. There is one point in regard to the technic of advancement that I think should be insisted upon in high degrees of convergence or divergence; it is impossible to correct the deformity without resecting a considerable portion of the tendon and in many of these cases I have secured the best result at the time by having the patient look at a red light for a test at the time of operation. Before the sutures are finally tightened the patient watches the light with a Maddox rod and I tie the stitches one at a time.

Dr. Black—I want to say a few words about the Panas operation. At first I was impressed with the belief that we did not get a sinking of the caruncle. This led me to believe that it might be possible to accomplish a considerable effect upon a moderate amount of squint without actually doing a tenotomy, but simply following the Panas operation up to the point of stretching the muscle. I do not believe it would be of any value in cases of marked squint, but in cases of intermittent squint or small amounts of constant squint. Waiting for a favorable case to present itself, one of intermittent squint that had been under observation for a considerable interval came to me about six months ago. The child was about 12 years old and had been watched for four years. The hypermetropia was about 5 diopters and the case was almost well, but the parents were getting uneasy and I believed it best to perform an operation. Both interni were stretched and we had a marked divergence for about ten days with complete correction resulting in about thirty days without tenotomy. I have not had the opportunity to repeat this, but I have noticed in doing the Panas operation that if the hook is removed after the stretching we often have the divergence. It is possible that this would only be temporary in the majority of cases.

Dr. A. E. Prince, Springfield, Ill.—I have a word to say on the cosmetic aspect of the subject, in cases of paralysis of the rectus and extreme over-correction with limitation of motion. About fifteen years ago I operated several times with unsatisfactory results. Finally, I operated in a case of double over-correction. A tramp doctor had stopped at a house and operated for internal squint in a boy for his lodging and $2.50. Later the eyes became extremely divergent and possessed almost no motion. I determined to make as bad an operation as my predecessor. Accordingly I made an exsection of half an inch of each external rectus so as to get behind the capsule of Tenon. An internal limiting suture was inserted which had the desired result and his eye remained cosmetically straight. Some years ago, at the invitation of Dr. Agnew, I operated at the Manhattan Eye and Ear Infirmary upon a case of paralytic convergence due to an injury. Patient's head had been jammed between two cars. In this case I exsected the internal rectus back to the apex of the orbit. The case was kept in the infirmary for some time as an exhibit case. Dr. Beard of

Chicago was the house surgeon at the time and remembers it. Since then I have exsected for paralytic strabismus a great many times with satisfactory results. Attention was called to this method of treatment in an article entitled "Section and Exsection of the Rectus," in THE JOURNAL of the Association, Oct. 13, 1888. I desire to mention it again, for every now and then I correct one of the cases which has been pronounced incurable by eminent oculists. I have had two cases who came to me requesting an enucleation rather than tolerate a motionless divergence; they would prefer a glass eye. In both cases the cosmetic success was eminently satisfactory.

DR. A. A. HUBBELL, Buffalo—I have had considerable experience in strabismus, and in the earlier part of my practice I approached it with a great deal of confidence from the operative standpoint. I got over that, however, a long time ago, and I now consider that it is one of the most unsatisfactory conditions we have to treat by operation. The first thing to be done is to endeavor to make clear in our minds the etiology of strabismus before we attempt any treatment whatever. Now, it must be admitted that concomitant strabismus, primarily, is a disturbance of innervation. It is a mistake, as I have said many times, to regard this affection as due to a weakness or over-strength of the muscles themselves. Taking alternating strabismus as an illustration, it can not be said that one internal rectus is too strong at one moment and the other at the next. The trouble is essentially with the centers of innervation which control the deviating movements. There may be a great deal of truth in Dr. Stevens' statement that a disturbance of innervation of the lateral muscles may be brought about by a hyperphoria, just as an error of refraction may produce the same effect. Perhaps the cyclophoria of Dr. Savage will do the same thing. We must thus take many things into consideration. The correction of errors of refraction is one of the primary steps to be taken toward relief, but it should be done early. Spectacles have little effect generally upon divergent strabismus, and if they are applied very early in convergent strabismus we may get a cure in a large percentage of cases, especially if the patient is old enough to practice the exercises mentioned by the other speakers.

I agree with some of the other gentlemen that it is a mistake to encourage the general practitioner to consider strabismus to be such a simple thing, and that it may be let alone until the child is 8 or 10 years old, when it can be easily and perfectly corrected by a tenotomy. We should see these cases early, as I have said, in order to get the best results from optical treatment; for later on they cease to be influenced by these measures, and operation, even with all its drawbacks and uncertainties, becomes necessary. The subject is a broad and difficult one, and I will close my remarks by confirming Dr. Ray's statement that alternating strabismus, in my experience, is a difficult condition to treat successfully by means of spectacles.

DR. C. A. VEASEY, Philadelphia—The method of correcting these cases which I have followed personally and which is also the method in use in the service of Dr. De Schweinitz at the Jefferson Hospital of Philadelphia, consists in a combination of some of the methods advocated here with modifications. In the first place, when a person presents himself with a condition of squint he is very carefully refracted and it is insisted that he shall wear a full correction constantly. If the case is a moderate one—and like Dr. Hotz we always make perimetric measurements of the angle before and after refraction—we at once begin to use the stereoscopic exercise, which is of benefit in moderate degrees, but of little use in high degrees. The patient is carefully watched, the angle of squint measured from time to time and if it is not making any improvement after a period of time, operation is advised. The operation performed depends upon the character of the squint. If alternating we usually find it necessary to divide it between the two eyes; if it is monolateral with amblyopia in one eye and of moderate degree of deviation we can usually correct it by an operation on the amblyopic eye. In the latter condition a complete tenotomy of one muscle is first performed, to be followed by advancement of the opponent if required. The operations are always done, except in young children, under cocain anesthesia, the angle being measured at different stages so that the effect may be controlled. Both eyes are bandaged or both are left unbandaged according to our control of the patient, the latter being preferable, and stereoscopic exercises are begun at once. In this way we are not only obtaining good results cosmetically but also in many cases binocular single vision.

DR. HIRAM WOODS, Baltimore—In reference to the contradictory reports as to the result in alternating squint I have been surprised that more stress has not been laid upon the acuity of vision in connection with the prognosis. My own experience has been that in cases of alternating squint with pretty nearly normal vision in both eyes the prognosis is good. I want to add a word of endorsement of Dr. Wilder's remarks with reference to the significance of abduction in testing these muscular conditions. This, with the parallax test of Duane, is the most important we have in determining the cause underlying the trouble. It is easy to see why faulty abduction is a valuable symptom, because the externus has an individual nerve supply. Abduction has not the same bearing. By Gould's exercise one can double or quadruple it in a few minutes. It is not so easy with abduction. Such a rapid increase apparently in muscular power seems to me nothing but the development of positive relative convergence, or teaching the patient how to separate C. for A.

DR. EDWARD JACKSON, in reply—Regarding alternating squint, there seems to be a confusion of different classes of cases. In cases of alternating squint with high ametropia and almost equal visual acuteness, I have found comparatively little difficulty. But there is a class of cases where the alternation clearly depends upon inability to turn the eyes in certain directions. With these cases there are great difficulties in treatment. The keeping of the eye open after operation is a very important point in the treatment of squint, and perhaps our greatest gain by a squint operation is in the breaking up of old habits of movement and leaving the eye for a time susceptible to the influence of non-operative treatment. The use of the eyes during these first few days after operation may be more important than anything else we can do in weeks of treatment afterwards. I might have said more about the stereoscope. I regard the ordinary form as about as valuable as the special ones that have been made for the treatment of strabismus. By varying the width of the pictures very different effects can be gained and there is an opportunity for inventive skill in furnishing the exercises for children. With regard to the strength or weakness of muscles, of course, that should be studied in every case before operation, and yet I have been decidedly disappointed in the effects of an advancement for convergent strabismus where I was sure the external rectus was the muscle at fault.

DR. C. F. CLARK, in reply—I should be very sorry to be put in a false position of being considered an authority upon strabismus. I regard our work in this line as merely a preliminary skirmish in the long struggle. I believe in the non-operative treatment, but we can not always use it, for there are hundreds of cases in which we must act quickly if we would do anything at all. Now, I think there is a decided limit to the value of non-operative treatment even where you might obtain the results. A well graduated and carefully worked out operation is often preferable to the hope long deferred and the effort to obtain that which you may not get in the end unless you have peculiar people to deal with. I am sorry that no one brought out exactly what they mean by an operation when they do operate; how far they confine themselves to the division of the tendon, or to what extent they divide the lateral fibers. I am coming more and more to the opinion that we should confine ourselves as far as possible to the tendon and leave the lateral fibers alone. In advancement, however, I think we should include the capsule with the tendon in order to get a good result.

A question was asked about the Fox operation. As soon as I heard Dr. Fox's paper I obtained his instrument and have been holding it in reserve until I could find a case in which

I would be willing to inflict the amount of traumatism he affects for the amount of correction desired. I do not like to operate in the dark as he seems to do. I feel deeply indebted to Dr. Prince for his forceps, which are to me invaluable, and by using them and the hook you can graduate your operations and have the whole of the tendon under control and determine how much to take off.

As to sutures, I generally prefer black silk because I can see them afterwards and remove them easily. As to the strength of muscles, I think we are using wrong terms in many of these cases. There are many cases where one muscle lacks strength or one is excessively strong, but I believe it is mostly a matter of innervation.

DR. A. E. DAVIS, in reply—I wish to say that the test employed by me was in every case the perimeter whenever it was possible. There is one point in the Panas operation that I would like to emphasize, namely, that it can be employed in either divergent or convergent strabismus and without regard to the presence of hypermetropia or myopia. I think that if we fail to recognize the fact that strabismus is a binocular affection we shall fail to get good results; we must operate on both eyes in every case. I was glad to hear Dr. Prince's experience, for it accords with my own.

DR. J. M. RAY, in reply—I formerly had very much the same idea in regard to the question of alternating squint as has been expressed here by Dr. Hotz and others; but when I began to study my cases, I found that the results did not accord with my opinion. On looking up the work of others, I find that the studies of Lang and Barrett, the monograph of Holthouse, and the recent work of Worth, all show as plain as figures can, that the correction of alternating squint, either by glasses or by tenotomy, is a more difficult problem to solve than is the correction of monolateral squint. My compilations show only 12 per cent. of cases of alternating squint cured by adaptation of glasses, while 30 per cent. of the monolateral ones were brought to parallelism by lenses. The same is true of the operation. Alternating cases are less often corrected by a single tenotomy, and advancements are more often necessary. As stated in the paper the externi are much weaker proportionately than in monolateral squint. My definition of alternating squint would include all squints that fix indiscriminately with either eye and where there is practically the same amount of vision in each.

TYPHOID FEVER—DIETETIC TREATMENT.

LOUIS FISCHER, M.D.
Visiting Physician to the Willard Parker and Reception Hospitals.
NEW YORK CITY.

The vital points to be considered in the course of treatment of typhoid fever are: 1. Exhaustion, from continued draining of the body, if a prolonged diarrhea exists; thus large quantities of serum are lost and the blood supply weakened. 2. Continued fever means continued loss of fat and muscle and rapid emaciation. 3. Loss of strength from recumbent position, and from absence of normal substantial foods. 4. Toxemia, showing its effect chiefly on the heart and circulating apparatus demands careful noting when stimulation is demanded. 5. Résumé of foods successfully used in a series of cases of typhoid. 6. The value of salines and especially the administration of saline infusion per rectum, and if coma prevails, its use by hypodermoclysis. 7. Albumin and salt administered subcutaneously. 8. Peptonization of foods; sterilization and pasteurization; use of raw milk in this condition. 9. The administration of water with and without carbonic acid gas. 10. If severe vomiting and gastric disturbance exists, feed per rectum and colon; if severe diarrhea and tenesmus prevails, feed per stomach.

Exhaustion.—When the body loses large amounts of serum, the volume of blood is diminished, and the skin appears parched and loses its normal elasticity; hence large quantities of water are indicated. This will be very grateful to the patient, especially during the febrile state. We must seek to supply this deficiency of liquid, abstracted from the body, by infusing large quantities of normal saline solution and giving frequents draughts of water to which the raw white of egg has been added. It is surprising to know how much albumin can be put into the body by gradually giving liquid draughts when the thirst demands it.

While it is a rare thing to find a nursling or an infant below one year of age having typhoid fever, even such children will digest small quantities of raw white of egg when fed at intervals of two and three hours. One of my favorite dietetic remedies is whey, which is made by peptonizing the milk at a temperature of about 115, beating up the curded milk with a fork until the curd is evenly divided, then straining this liquid whey through a cheese-cloth. When it is flavored by the addition of a few drops of lemon juice, or vanilla, or peppermint, we make it more palatable and do not disturb its nutritious properties.

Barley water, rice water, farina water, almond milk are all nutritious foods, easily digested and readily absorbed.

Toxemia.—If there is a distinct toxemia or evidences of profound systemic poisoning, nothing will be as useful as the introduction of large quantities of a normal saline solution, hypodermically. This can be injected into the abdomen by plunging a large aspirating needle into the deep cellular tissue to which is attached an ordinary fountain syringe holding about two quarts of water. Too much pressure is not needed for the introduction of a pint, or two pints of liquid; frequently, holding the syringe about two feet from the patient's body, will give ample pressure for its thorough introduction.

The lymphatics, during the febrile state, are usually so greedy that they will absorb several quarts of this normal saline solution and hence this important fact should be noted; the bowels and the heart's action should be carefully followed and a comparison made of the condition of the same, before, during and after the injection of this normal saline solution. It is advisable, if the patient has been benefited, to repeat these injections every six, twelve or twenty-four hours, depending on necessity. Flushing the system with this normal saline solution will carry off from the skin and kidneys large quantities of poison.

Rectal Feeding.—If the stomach rebels and vomiting is an urgent symptom, then we must try giving the stomach rest and rely on rectal feeding. For this purpose the rectum should be thoroughly flushed with normal saline solution, and one ounce of thoroughly peptonized milk, to which one ounce of starch water is added, should be injected in intervals of four hours.

Sub-cutaneous Feeding.—An important point to remember is, that the white of a raw egg can be added to the normal saline solution and injected hypodermically.

Thirst.—Carbonic acid water and water acidulated with dilute hydrochloric acid seem to be not only very well borne but appear to inhibit bacterial action, besides being very grateful to feverish patients.

The successful management of a typhoid fever case does not depend on the administration of drugs, excepting eliminatives, but depends solely on supporting the vitality of the child by giving it liquid foods, as above enumerated, and thus sustaining the heart.

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REVERSIBILITY OF ENZYMES.

A most important addition to biological sciences is furnished recently by the observation that ferments, at least several kinds if not all, are capable of reversing their ordinary splitting action, and instead combine the separated substances into the substance they originally formed. For example, the renal epithelium, which has long been known to synthesize benzoic acid and glycocoll into hippuric acid when brought into contact with a mixture of the two substances, will act in an opposite manner when brought into contact similarly with hippuric acid alone, splitting it up into glycocoll and benzoic acid. In other words, enzyme action is like any other chemical reaction, in that the reaction is reversible.

This important property of enzymes was first demonstrated by A. C. Hill,[1] who approached the question in the way above mentioned, that is, with the object of ascertaining if enzyme action was reversible in the same way in which chemical reactions are. He was successful, for he found that maltase, a ferment which splits maltose into glucose, placed with a solution of glucose, will cause a certain number of molecules of glucose to combine to form maltose. Also, it was found that the end result was the same whether the enzyme acted upon maltose solution or upon glucose solution, for in either case the changes caused the production of a solution containing a mixture of maltose and glucose with the same relative proportions of each. It thus becomes evident that the enzyme brings about a certain equilibrium between the complete substance and its components. When that equilibrium is reached no further action occurs, but if we remove one of the substances, say by dialysis when this is possible, then the reaction will continue as long as equilibrium is not attained. Whether this reaction will be one of building or of splitting will depend upon which of the substances is in excess.

Lipase, the fat-splitting ferment, has been found also to act as a fat-forming ferment by J. H. Kastle and A. S. Loevenhart.[2] While this ferment is ordinarily thought of as a constituent of the pancreatic juice these authors and others have found that it is much more widespread, being present in the liver, submaxillary gland, and kidney of the hog, and also, which is of especial importance, in the epithelium of the small intestine. Indeed, the pancreas is not the chief place of its existence, for liver tissue has nearly three times as vigorous lipolytic action as the pancreas tissue. Hanriot has also demonstrated the presence of a powerful lipolytic enzyme in the blood serum, so it is to be presumed that the distribution of fat-splitting ferment is almost universal in the body, for if not present in the tissues of an organ it would be supplied by the blood flowing through those tissues.

Now, with this new knowledge both of the wide distribution of lipase and its double action, we are in a fair way at last to clear up the perplexing question of fat metabolism, both in health and disease. Take for example fat absorption from the intestine. It may now be considered to take place by some such steps as these: First the lipase of the pancreatic juice splits up fat into fatty acid and glycerin; by the laws of osmosis these substances would diffuse into the epithelial cells lining the intestine, but here, meeting the lipase of these cells, part would be synthesized into fat; and histologists have long since shown the presence of fat droplets in the absorbing epithelial cells. Next, in the portion of the cell nearest the lacteal stream the glycerin and fatty acid still uncombined would pass out by osmosis, and so the necessity of establishment of equilibrium would lead to a continuous splitting of the fat in this part of the cell, with liberation of more glycerin and acid. When these reach the blood stream equilibrium is re-established by the lipase of the serum. Probably the tissue cells utilize the fat in a quite similar manner.

Thus is explained by simple physical laws a process long puzzling to physiologists, who have often fallen back in despair to that fast-narrowing loophole of escape, the "vital properties of the cell." As new observations are rapidly pointing out the part played by enzymes in cell activities in ways hitherto unsuspected, the far-reaching importance of this fuller understanding of the manner of enzyme action is perceived.

1. Journal of the Chemical Society, lxxiii, 1898, 634.
2. Chemical News, vol. lxxxiii, 1901, Nos 2150 to 2155.

PENNY-WISE DISINFECTION.

The full report of Governor Gage's special lay "health commission"—chiefly of newspaper men—has come to hand and is interesting and suggestive. Its conclusions and that of his "state board of health" that there is not and never had been any plague in San Francisco, and that the reports of its existence were based upon the diagnostic mistakes of such incompetent observers as Drs. Barker, Flexner and Novy, has already been noticed in THE JOURNAL. In this full report, however, there are other interesting details. After the agreement with the United States authorities as to disinfection and cleansing of Chinatown, the report says that the instructions of Dr. White, the government official designated to oversee the work, "were rigidly adhered to." This is important; but we read, a few lines farther on, the self-congratulations of the commissioners over their economy and that "by disregarding the recommendation of Dr. White to purchase sulphur, bichlorid of mercury, Dutch ovens, etc., in large quantities a considerable saving was

effected. Thus the work of disinfection and fumigation was thoroughly performed with 300 pounds of sulphur although the Marine-Hospital service estimated that 30 tons would be necessary. Fifty pans were bought and 20 only used, but the requisition of the federal official called for 200." These are valuable facts as showing the rigid adherence to instructions and the thoroughness of the work.

Some 30,000,000 cubic feet of dwelling apartments are said, by the board of health, to have been fumigated; thus one pound of sulphur was sufficient per 100,000 cubic feet, a fact in sanitation that is worth knowing. It is such admissions as these that make the report suggestive and enable one to estimate the general thoroughness of the work. We sincerely trust that the local San Francisco Board of Health, which has, we believe, manfully held its own way and opinion thus far as regards the plague cases in that city, will be able to ward off a serious outbreak of the disease, which, according to the Public Health Reports, still lingers in its Chinese quarters. If they fail they can not be much to blame when we consider the opposition of the state authorities and what it means. Should they fail and the pest really become epidemic the Governor and the creatures of his "boards of health" will probably find that they have been laying up for themselves a day of wrath.

One can not help comparing the methods adopted by the governing authorities in California with the methods adopted in foreign countries in bravely meeting this foe and not denying its existence, especially the open recognition of its existence by the authorities in Glasgow and the energetic methods adopted to suppress it. The disgraceful way in which the Governor of the great state of California and his creatures have acted in regard to this epidemic is a reflection not only on the city of San Francisco and the state of California, but on the United States.

RAILWAY SANITATION.

According to a Berlin dispatch, the Prussian state railway authorities are taking special precautions against the spread of contagion by public conveyances under their charge. They even propose to go so far as to have a physician accompany through trains and the station masters are to furnish him with detailed reports of typhoid cases, etc., occurring in their towns or any suspicions of such. Sterilized water tanks are to be put up and conspicuously labeled and fresh boiled water supplied. All precautions against infection are to be employed about the stations, which will be practically quarantine stations. All this is said to be on account of the spread of typhoid, but it is to be presumed other infections will not be disregarded. Any person who travels and who has even an ordinary eye to sanitary defects can see many opportunities for mischief in railway carriages, and it is said that aside from the spitting nuisance, matters are worse in European travel than in this country. One probable good effect of the public scare as to tuberculosis, etc., which has not yet reached its climax, will be to improve matters, and it is even possible that the expectorating nuisance may be put down. The important point is that the right thing be done; it is too much to expect that only this will be attended to; there will undoubtedly be many mistakes. If we can feel that decent disinfection, comparative cleanliness and just, reasonable and practicable precautions against infectious disease are the rule, and spitting is suppressed, we can trust to our vital resistance for the rest and travel with comparative comfort. The Western Passenger Association, it is reported, is to consider a demand from the Travelers' Protective Association that traveling consumptives be isolated. It might be well if this could be done, but there are enough infected individuals whom hardly anything short of a tuberculin test could reveal, to make such an attempt ineffective. Every passenger would have to be examined to insure full protection, and this is a manifest impossibility. In the meantime we need not forego altogether the pleasure of travel on account of the perils that have always existed, even to a greater extent than at present, and of which we are only now becoming fully aware.

Apropos to the above it may be added that the Russian bureau of railways has also published rules in regard to travelers, requiring all cases of infectious disease on railroad trains to be at once removed and put in charge of the police at the nearest station where medical care can be given. Any car in which a case of smallpox, scarlet fever, diphtheria, typhoid or dysentery has occurred must be detached and disinfected. In case of other infectious disorders the question of disinfection, etc., is left to the judgment of the medical official.

MORE SANITARY SLEEPING-CAR ACCOMMODATIONS NEEDED.

In another column a correspondent calls attention to a nuisance that, it is rather strange, has not received more attention heretofore, viz., the promiscuous and varied use of the washing apparatus on sleeping-cars. Any one who has utilized these extensively can corroborate our correspondent's charges. Personal cleanliness is praiseworthy, and tooth-brushing an essentially sanitary measure, but, like some other salutary performances, it should be done with some regard for public decency. Hawking and spitting into a public wash-bowl and blowing one's nose into it are offenses that come pretty near to, if they do not quite reach, the climax of offensiveness. It is possible, perhaps, to imagine worse ones, but there is no need of it. For years the writer has followed, in public wash-rooms, the custom of washing only from the spout, and there are many others who do likewise, but this can not be done in the contrivances of the railroad car. There is no reason why railroad and sleeping-car companies should not follow our correspondent's suggestion and add separate tooth-washing sinks and enforce their usage. We have yet a few wrinkles of civilization to adopt, and this is one.

ANOTHER FAITH DELUSION.

A "christian science" writer evidently wants to climb with his fad into the band-wagon. Noticing the improvement in mortality statistics during the past decade he immediately correlates it with the growth of his delusion. He says: "While investigators may ascribe this remarkable improvement to different causes, according to their point of view, these figures prove conclusively that at the same time that 'christian science' has been sweeping over the country from end to end, health and longevity have made great conquests over sickness and death." It is a common observation in psychiatry that the morbid mind applies everything to itself and its own agency, and this utterance has much of that appearance. It was taken, however, from a communication to an insurance publication and there was probably an idea that it might pass for an argument or evidence in favor of Eddyism with insurance officials, who have not shown a tendency to favor that cult in a business way. We might as well credit the reduced mortality of the last ten years to the influenza as to Eddyism; the same reasoning will apply to both, but the Eddyites won't see it.

THE INFLUENCE OF CONCENTRATION AND OF THE NUMBER OF SITES FOR HYPODERMIC INJECTION.

There is a belief in some quarters that drugs taken in undiluted form are more active than when taken diluted, but this view is not generally accepted. It would on the same line of reasoning be expected that medicaments administered hypodermically would be the more active the more concentrated their form. Of this, some observations recorded by Dr. S. J. Meltzer[1] would seem to supply evidence, as well as of the further fact that the intensity of action can be increased by making the injection in more than one situation. The observations were made in the course of experiments disproving an assertion that had been made to the effect that animal tissues are capable of neutralizing or fixing the poisons of strychnin and venom. When the minimum effective dose of strychnin divided into three equal parts was injected into three of the previously ligated extremities of a guinea-pig violent convulsions occurred as soon as the ligatures were removed. These convulsions were more pronounced and set in earlier than those induced by injection of the whole amount into a non-ligated member. Further experiments showed that injection of a given quantity into three unligated members was followed by more profound effects than injection of the same amount into a single unligated member. Finally, it was found that the injection of a given amount of strychnin was followed by far less pronounced effects when the dilution was greater, and even if larger amounts of the drug were used. These observations accordingly demonstrate that the effects of subcutaneous injections depend upon the concentration of the solutions injected and are materially influenced by a greater distribution of the injected quantity over several areas.

1. Journal of Experimental Medicine, vol. v, No. 6, p. 643.

VIVISECTION IN POLITICS IN MASSACHUSETTS.

There is a little paper called the *Animal Defender* devoted to general misrepresentation, in behalf of the causes of anti-vivisection, anti-vaccination, etc. In its latest issue it reproduces the letter of President Brown of the American Humane Association, published in THE JOURNAL October 19, and says in comment thereupon: "Some of the worst instances of human vivisection have been openly confessed by their perpetrators in THE JOURNAL'S columns within the last two years; and no word of criticism or reproof has ever accompanied them." Our readers can appreciate this misrepresentation—we might use a stronger and more emphatic term—without our dilating upon it; it is mentioned to show what sort of reckless statements are emitted by these zoöphile fanatics. We call them fanatics in charity, though a much worse designation might better fit. Their literature is circulated among the people and undoubtedly creates a certain amount of public sentiment, and may even influence legislation. In the same issue is published the status of Massachusetts' legislative and state candidates at the coming election regarding the question of legal restriction of vivisection, as given by answers to a circular letter sent out by the New England Anti-vivisection Society. A plea is made for all supporters of the cause of zoöphily to note these replies and select their candidates accordingly. As they are introducing the subject into politics it would be well hereafter for the medical profession to see that legislators are duly enlightened. The matter is called to the attention of the profession in Massachusetts especially. Those who estimate the prohibition of the alleged sufferings of a few animals utilized for the benefit of our race as "the most important matter before the world to-day," therefore above even the temporal and spiritual salvation of mankind, are not very safe advisers.

THE MICROBIC FLORA OF THE MOUTH OF NURSLINGS

The importance of microbes both in health and in disease fully justifies all studies that tend to throw light upon their relations to the human body. The microbic flora of the mouth has been studied extensively in the adult, but in the case of the newborn and in the nursling, in which the conditions are in every way simpler and less complicated, a beginning only has just been made in the study of the buccal bacteria. Lewkowicz[1] carefully examined the mouths of several nurslings according to improved methods, and his results indicate that streptococci are the earliest and most numerous bacteria to appear. A pneumococcus of little or no virulence is also quite constant. Other micrococci were also found, but in no case did he meet with any pyogenic staphylococci. Among the bacilli an acidophile form is most frequent. Later on, strict anaërobes are found. Their existence in a cavity so well aërated as the oral is probably due to the presence of numerous recesses into which the air penetrates with difficulty, and also to the action of the numerous aërobic forms which use up all the free oxygen and thus establish the conditions necessary for anaërobism. One of these anaërobic organisms, bacillus bifidus communis, forms a large part of the intestinal flora in nurslings and it seems to make its appearance in the mouth and in the intestine at about the same time. The author also succeeded for the first time in cultivat-

1. Arch. de Med. Exp. et d'Anat. Path., 1901, xiii, 633-660.

ing the leptothrix buccalis, which is also a strict anaërobe. Studies of this sort must form the basis for an appreciation of the importance of variations in the bacterial species in pathological states, whether general or local. Then the much richer and more variegated buccal flora later in life is studied with better understanding if we go upward from the simpler conditions in the newly born to the adult in whom the anatomical relations are more complicated and the food-supply a great deal more varied.

LOMBROSO ON ROYAL CRANIA.

According to the Paris dispatches, the savants of that capital have not the reverence for potentates and fear of *lèse majesté* laws in their mental make-up to any great extent. They recently enjoyed a lecture from the celebrated Italian anthropologist, Professor Lombroso, who was feted by them on his way home from the Amsterdam Congress of Criminology, in which he discussed the characteristics of contemporaneous rulers, using as illustrations a series of casts of their craniums furnished by Virchow. Most of them were found by him to be criminals or lunatics, the exceptions being the Czar of Russia, who is a sort of harmless innocent, and King Edward VII, who is only somewhat more than the ordinary average of mediocrity. The Emperor of Germany he considers a born tough, who under ordinary conditions would probably come to the gallows, and the Sultan of Turkey would in common life be a sneak thief. Details are wanting as to Professor Lombroso's opinion of the other royal personages, but others have endorsed his views that Europe is in the hands of idiots, rascals and lunatics. It had seemed to us before that modern royalty was, in spite of its many faults, rather a good lot as compared with their predecessors, and that while the institution of royalty was unfortunate in giving responsible position to those handicapped by a bad family history, it was at present better represented than might have been expected under the circumstances. We are not surprised at the verdict on the Sultan, but as for the rest it seems still a little harsh. In fact, such a wholesale disparagement of exalted personages has almost an anarchistic twang, and we doubt whether it is profitable even if there is a basis for it. Emperor William would probably make it unprofitable if he could, and Professor Lombroso need not be surprised if he should some time find himself *persona non grata* on venturing within his jurisdiction. Possibly, Lombroso himself, if he could see himself in a purely objective way, might find considerable abnormality and degeneracy in his own cranial and mental organization.

SYPHILITIC ENTERITIS SIMULATING MELENA IN THE NEWBORN.

Hemorrhage from the bowel is naturally only a symptomatic manifestation in children as well as in adults. Intestinal ulceration and erosion of a blood vessel constitute the most obvious cause, although the bleeding may take place in connection with a condition of hemophilia. A case has recently been placed on record by Dr. Jos. Esser,[1] in which enteritis of syphilitic origin in a newborn child was attended with fatal hemorrhage from the bowel and which is of especial interest on account of the underlying disorder. An illegitimate female child, with jaundice, began on the fifth day of life to have bloody stools, which continued until death occurred on the tenth day. On the sixth day a rapidly progressive bluish-red swelling appeared on the dorsum of the left hand and ruptured toward night, discharging blood. On postmortem examination there was found, in addition to osteochondritis, indurated enlargement of the spleen and vascular changes, and thickening of the jejunum with ulceration of the mucous membrane. Also the follicles of the ileum and the colon and the mesenteric glands generally were enlarged. Microscopic examination disclosed cellular infiltration of all of the coats of the intestine, particularly about the smaller vessels, causing occlusion and necrosis with ulceration. The walls of the splenic vessels, especially the smaller and the medium sized, were thickened, particularly the adventitia and the media, and the lumen was narrowed. Hyperplasia of the stroma adjacent to the larger vessels was present and the pulp cells contained a considerable amount of black granular pigment. The spleen contained also small areas of necrobiosis. The subcutaneous connective tissue related to the lesions on the hand was infiltrated with blood and the middle coat of the vessels—both arteries and veins—was greatly thickened. The vasa vasorum were in some instances surrounded by cellular infiltration, and in some places the elastic fibers of the intima were torn and the wall and the surrounding tissues suffused with blood.

1. Archiv für Kinderheilkunde, 32 B., 3 u. 4 H., p. 177.

TETANUS FROM ANTI-DIPHTHERIA SERUM.

A considerable number of children in St. Louis have been infected with tetanus by the injection of anti-diphtheria serum. A number of deaths has occurred from tetanus in children treated with diphtheria antitoxin either for curative or prophylactic purposes. This antitoxin was manufactured by the city of St. Louis, and the statement is made that the horse which furnished the serum developed tetanus. It is also stated that a guinea-pig injected with the diphtheria antitoxin used in these cases promptly developed tetanus. Whatever truth there may be in these startling statements they certainly are calculated to strike a note of alarm and of regret that there should have happened anything that even remotely corresponds to the news reports. There is to be considered not only the sad fate of the children who possibly escaped diphtheria only to die of tetanus, but also the general effect which such lamentable mishaps are sure to exercise upon the public. The medical profession knows only too well to what evil purposes happenings of this kind are used by the anti-vaccinationists, anti-vivisectionists, "christian scientists," and crotchety persons in general. Prejudice and fear thus engendered among the communities may cause a degree of harm that in the end becomes immeasurably greater than the immediate damage. One of the most important and also difficult rules for physicians, since the days of Hippocrates, "first of all do no damage"—πρῶτον τὸ μὴ βλάπτειν—is called to mind by the immediate and remote consequences of occurrences like the one reported from St. Louis. The unavoidable and unforeseen difficulties in the way of always carrying out this precept, the wisdom of which no one

denies, are a matter of familiar experience to practitioners of medicine. It is not always possible to control fully the circumstances surrounding the production and handling of many of the powerful and complicated agencies used with general success in combating dangerous diseases. This is not the first time that fatal tetanus has resulted from the injection of diphtheria antitoxin, and in all probability it will not be the last time; thus there is placed upon those that undertake its manufacture a tremendous responsibility which should and no doubt does stimulate to ever renewed and redoubled vigilance. Physicians everywhere should ever bear in mind that even a puncture by a hypodermic needle may be the means of introducing the most dangerous infections, the agents of which may occur in the fluid injected, upon the instrument used, and upon the skin of the patient.

Medical News.

COLORADO.

St. Luke's Hospital, Denver, is to have a $60,000 addition to accommodate 40 patients. During the last fiscal year 1027 patients were received at the hospital and 602 operations performed. Among the directors, all of whom were re-elected, were Drs. Frederick J. Bancroft and Edmund J. A. Rogers.

New Health Orders.—The Board of Health of Colorado Springs, desiring to avoid a repetition of last winter's epidemics, has issued orders for the connection of all houses with sewers, or when this is impossible, the combination of vaults and cesspools in accordance with the requirements of the health ordinances. A second order holds those in charge of private or parochial schools responsible for the strict enforcement of the compulsory vaccination law and the observance of the ordinances regarding infectious, contagious or communicable diseases.

DELAWARE.

Smallpox is reported in Bethel with three cases, one patient being in a critical condition.

Dr. Columbus Henry, Newark, has been appointed trustee of the poor farm, White Clay Creek Hundred.

Dr. Swithin Chandler and wife of Wilmington, are spending a year in Europe where Dr. Chandler will take up special studies in Vienna, Berlin and Paris.

DISTRICT OF COLUMBIA.

Army Changes.—Lieutenant-Colonel Ezra Woodruff, deputy surgeon-general, U. S. Army, was placed on the retired list, October 24.——Dr. Charles H. Andrews, acting assistant surgeon, U. S. Army, was appointed major and surgeon of Volunteers, November 2.

Government Hospital for the Insane.—Ground has at last been broken for the addition to the hospital, for which $1,000,000 was appropriated. The extension is to accommodate 1000 patients and 200 employes. The trustees recommend an additional appropriation of $145,000 for an administration building, of $150,000 for a central heating and power plant, and of $20,000 for an enlargement of the kitchen, and of $495,000 for the care of 2250 inmates at an estimated cost of $220 per capita.

Freedmen's Hospital.—In his annual report, Dr. William A. Warfield, surgeon-in-chief of the Freedmen's Hospital, Washington, recommends the erection of a new building large enough to gather all the various wards of the hospital under a single roof and equipped with the needed appliances of a modern hospital. The present buildings are all old frame structures, difficult to heat, troublesome to ventilate and inaccessible. During the fiscal year 2552 patients were cared for in the hospital and 5084 persons received treatment in the out-patient department.

Waldeyer's Washington Welcome.—Dr. Heinrich Wilhelm Gottfried von Waldeyer, president of the Berlin Academy of Sciences, visited Washington, October 30. He was entertained by Dr. Charles Wardell Stiles at his residence, welcomed in characteristic way by the students of the Georgetown Medical College, whom he addressed in German, his remarks being translated by Dr. George M. Kober, dean of the college; received by the president; tendered a luncheon at the Jesuit College, a reception at the Department of Agriculture, a dinner by Dr. Stiles and a reception by the Cosmos Club.

ILLINOIS.

Bond County Medical Society has decided on a fee-bill allowing $1.50 for day calls and $2.00 for night calls in town.

Unknown Donor.—A gift of $15,000 to Northwestern University, Evanston, is announced. The donor is a wealthy physician of Ohio who desires to do good by stealth.

Brokaw Hospital.—The new building for this hospital, built at a cost of $20,000, will be ready to receive patients by the middle of November. The building will accommodate 55 patients.

Alice Home, the public hospital at Lake Forest, erected and donated to the village by the Durand family, is to be enlarged by the erection of a contagious disease ward to cost $8,000, donated by Mrs. H. C. Durand.

Smallpox.—Red Bud has 27 cases of smallpox, with one death; Hamilton, 16 cases; Wythe Township, several cases, and Mount Auburn, 3 cases. Quarantine has been established and all schools at Hamilton and Elvaston have been closed.

Personal.—Dr. John Haig, Leroy, has been compelled to retire temporarily from practice on account of his eyes.——Dr. E. R. Motley, Kinderhook, has sold his practice to Dr. Charles W. Trautwein, and will move to Virden.——Dr. Charles E. Wilkinson, formerly of Monticello, has returned after 18 months spent in study in Europe, and has located in Danville.

Chicago.

Dr. George W. Hall has been appointed neurologist to Cook County Hospital.

Scientific research under the auspices of the Rockefeller fund will soon begin under the direction of Dr. Ludvig Hektoen. Dr. J. C. Friedman will devote his whole time to original investigation.

Personal.—Dr. Arthur R. Reynolds, Health Commissioner, visited the Buffalo Exposition last week.——Dr. Alfred Hakanson has returned from Europe and has opened an office at 100 State St.

A New Journal.—The Chicago Pathological Society will hereafter publish its transactions in journal form in place of the annual transactions. Number 1, vol. v, of the new series has just been received.

"Passing-Up" Tabooed.—Two students of the University of Chicago have been suspended for participating in "passing-up" fellow students, a custom which the authorities of the university have prohibited.

Health Department Guiltless.—Judge Tuley on October 31 directed the jury to bring in a verdict of not guilty in the case against Dr. Arthur R. Reynolds, Commissioner of Health, and Mathias Brand, formerly a member of the Board of Health, in the suit of Mrs. Mary E. Moore, who sought to recover $25,000 damages on account of alleged detention in the isolation hospital.

The Week's Mortality.—During the week ended November 2 there were 408 deaths reported to the Health Department, this being 34 fewer than the preceding week, but 22 in excess of the corresponding week of last year. The week's mortality record was the second lowest during the year, the death rate being but 12.08 per thousand of population. Fewer deaths than customary from acute intestinal diseases; diphtheria, heart diseases and nervous diseases chiefly contribute towards the low mortality rate. There were 23 deaths from typhoid fever during the week, or 7 fewer than the preceding week, which was the highest point reached in several years.

INDIANA.

Smallpox is reported epidemic at Glendale, Daviess County, where 27 cases have occurred, and at Union City.

Linton Physicians' Club.—The physicians of Linton have organized a club for social and scientific purposes, which meets every Wednesday evening.

"Dr." Earl C. Smith, Indianapolis, set down in Polk as an eclectic physician, has been held under $300 bonds at Madison for practicing without a license.

Diphtheria is prevalent at Shelbyville, where one school has been closed, and in the southern part of Scott County. The spread of the disease at Knox and North Judson has been checked.

Board of Health.—The Mayor of Indianapolis has named as the new City Board of Health, Dr. George H. E. House, president; Dr. George H. F. Kahlo, Dr. Frederick C. Heath, and Dr. Eugene Buehler as city sanitarian and secretary to the board. The new board has appointed Dr. Norman E. Jobes, superintendent of the City Hospital, and Dr. Charles O. Lowry, superintendent of the City Dispensary.

Personal.—Dr. B. D. Brown, Indianapolis, has been appointed assistant superintendent of the East Tennessee Hospital for the Insane at Lyon's View, Knoxville, vice Dr. Clio Collier, resigned.——Dr. I. J. Vaughan has returned to Topeka. ——Dr. Alva L. Spinning has located in Michigan City.——Dr. H. B. Shacklett, Leavenworth, has moved to New Albany.——Dr. Joseph E. Ziliak, Haubstadt, has moved to Linton and formed a partnership with Dr. Sam N. Quillian.——Dr. W. E. Kessinger has moved from Scotland to Sandborn.

IOWA.

The Southeastern Iowa Medical Society will meet at Burlington, November 26.

The Constitutionality of the state law regarding osteopaths is on trial. The suit of Parsons against the State Board of Medical Examiners was begun before Judge Holmes, at Des Moines, October 31.

Personal.—Dr. Mary C. Heilesen has located at Shenandoah.——Dr. Albert M. Barrett, Independence, sailed for Europe, October 22, where he expects to study for six months and then return to become one of the staff of the Danvers (Mass.) Insane Hospital.——Dr. Ernest E. White, Pleasant Plain, has moved to Knoxville where he is associated with Dr. Norman R. Cornell.

LOUISIANA.

New Orleans' Mortality.—The mortality of New Orleans for September among whites was at the rate of 12.52 per 1000 per year. The mortality among the colored population is not given.

Physicians Licensed.—The State Board of Medical Examiners, at its meeting October 24 announced that 17 out of the 31 candidates examined had passed. Three candidates were colored, of whom one passed.

Yellow Fever Institute.—The following New Orleans physicians have been selected as civilian members of the Yellow Fever Institute, created by Act of Congress in March last and placed in charge of the United States Marine-Hospital Service: Drs. Felix Formento, Henry A. Veazie and Lucien F. Salomon, and Professor Beyer of Tulane University. The Institute will be divided into four sections, the first of which will concern itself with the history and statistics of the disease, including the relation of the slave trade and modern sanitation. Section B will be occupied with the cause of the disease, while Section C will specially study its transmission by the mosquito. This insect will be studied from all points. Its life and habits will be thoroughly investigated, and the question whether its progeny may be infected through the parent insect, and whether infection may be conveyed by other than its means worked out. Section D will consider quarantine and treatment. The main lines of study of this section will be whether disinfection of baggage is necessary to prevent the spread of the disease; the treatment of the patient, the immunity of individuals and of races, individual prophylaxis and communal prophylaxis by means of sanitation.

Charity Hospital Appointments.—At the recent meeting of the Board of Administrators of Charity Hospital, New Orleans, the medical committee submitted the following-named visiting staff for the half-year: Visiting physicians—Drs. P. Emile Archinard, Thomas S. Kennedy, Edouard M. Dupagnier, Lionel A. Cazenavette, Abraham Nelken, J. Moore Soniat, Joseph M. Elliot, Arthur Weber, Narcisse F. Thiberge, George S. Bel, L. C. Chamberlain, Henry B. Orr, John B. Elliott, Louis F. Reynaud, Jacob A. Storck, Otto Lorch, Edward J. Huhner, W. B. Robertson, Louis G. Le Beuf, William H. Seeman, J. A. Danna, William W. Butterworth, Jacob Barnett, Henry Bayon, G. King Logan and John B. Elliott, Jr.; visiting surgeons—Drs. Ernest S. Lewis, Paul Gelpi, C. Jefferson Miller, L. B. Guthrie, L. Thibaut, Charles L. Chassaignac, E. Denegre Martin, Henry S. Coeram, W. M. Perkins, Marion Souchon, Luther Sexton, Sidney P. Delaup, S. M. D. Clark, Hermann B. Gessner, Charles A. Borey, Rudolph Matas, Albert S. Yenni, Edmond Souchon, Eugene H. Walet, Edmund Moss, J. Lewis, C. Perrilliat, Frederick W. Parham, Paul Michinard, Felix A. Larue, John F. Oechsner, Clarence L. Horton, S. W. Stafford, Marion H. McGuire, William E. Parker, I. I. Lemann, Hampden S. Lewis, Jules Lazard and C. N. Chavigny; visiting aurists, rhinologists and laryngologists—Drs. J. Phares O'Kelley, Otto Joachim and Edward W. Jones; visiting oculists —Drs. Edward W. Jones, Otto Joachim and Paul L. Reiss; dermatologists—Drs. Isadore Dyer and Ralph Hopkins.

MARYLAND.

Baltimore.

The semi-annual meeting of the Medical and Chirurgical Faculty will be held at Elkton, Cecil County, about the middle of the month.

Mortality and Morbidity.—The city has been free of smallpox since early in July. The deaths for the week ended November 2 were 178; only 2 died from typhoid fever and 12 from pneumonia.

Editions of Hippocrates.—Dr. Howard A. Kelly has 150 editions of the works of Hippocrates. This is, without doubt, the finest and most complete collection of the writings of the "Father of Medicine" in America, if not in the world.

Dr. John C. Hemmeter's book on "Diseases of the Stomach" has been translated into German, and a French edition is also in preparation. The whole of the fourth edition—5000 copies—of Osler's "Practice" has been sold and a reprint will be necessary.

Personal.—Dr. Albert Scott Harden sailed on October 28 to complete his medical studies in Europe.——Dr. John Montgomery West will sail shortly to spend several years at German universities.——Dr. Sidney O. Heiskell has resigned as chief surgeon of the Maryland Naval Reserves; Dr. Alan W. Smith has been appointed to fill the vacancy.

Repeal of Infectious Diseases Hospital Ordinance.—The action of the city council in repealing the ordinance creating the Infectious Diseases Hospital Commission and re-enacting the same is a temporary death-blow to our hopes of securing this long-needed institution; it deprives the commission of the appropriation and other resources for building and paying for the site already chosen. The property was in all respects suitable and the only drawback was the objection by neighbors to the location there.

New Section Organization.—The new place for the organization of sections by the Medical and Chirurgical Faculty was put into effect on November 1, when the Section in Clinical Medicine and Surgery was organized by the election of Dr. L. McLane Tiffany as chairman, and Dr. John Ruhräh as secretary. Dr. Osler exhibited a case of scurvy and Dr. Ruhräh gave a lantern demonstration of syringomyelia and other affections. About 75 were present. There are five sections at present contemplated; they will meet in turn on Fridays.

MICHIGAN.

Scarlet fever has broken out in Montgomery and the public schools have been closed.

Dr. Donald Maclean and Dr. Max Ballin, Detroit, have located in the Grand Circus Building, 271 Woodward avenue, and announce that their practice will be limited to consulting and operative surgery.

Personal.—Dr. Della P. Pierce, Kalamazoo, is convalescing from typhoid fever.——Dr. Grant Ide, Dutton, has disposed of his practice and is visiting in Oshtemo and Mattawan.——Dr. Frank A. Waples, Battle Creek, has left that city for New York.——Dr. William H. Matchette, Dollar Bay, has located in Hancock.

MINNESOTA.

Dr. Homer P. Dredge, Belview, has been elected coroner of Redwood County, vice Dr. Arthur B. Hawes, Redwood Falls, resigned.

Personal.—Dr. Samuel H. Boyer, Duluth, was seriously injured in a runaway accident, October 24.——Dr. David F. Rae, Pelican Rapids, has moved to Fergus Falls.

Smallpox is reported as follows: Red Lake Falls has 30 cases and schools and public buildings are closed; St. Paul has 3 cases; a patient with well-developed smallpox drove into Red Wing from Bay City, Wis.

Vaccination Requested.—At the Grant School, Minneapolis, two children were exposed to smallpox, and the board of education has requested that all unvaccinated children be

vaccinated in accordance with the direction of the Board of Health.

Physicians in Partnership.—Drs. James B. McGaughey, Edward D. Keyes, Nathaniel S. Lane, Donald B. Pritchard, Hans M. Lichtenstein, Oswald Leicht and Hugh F. McGaughey, Winona, have formed a partnership which became operative November 1.

MISSOURI.

A medical department is to be added to St. Louis University provided the necessary funds for its establishment can be raised. It is said that substantial promises have already been made.

Tetanus from Antitoxin.—Thirteen deaths from tetanus following injection of diphtheria antitoxin are reported from St. Louis. It is claimed that the use of impure antitoxin is responsible for these fatalities, but the facts will be undoubtedly brought out at the inquiry which is to be held. The antitoxin in question was prepared under the supervision of the city bacteriologist.

Personal.—Dr. Louis P. Butler, Casco, who has recently returned from Europe, is about to locate in St. Louis.——Dr. Jerome K. Bauduy, St. Louis, broke his left arm and sustained other serious injuries in a fall, October 20.——Dr. Edgar S. Harris, Tarsney, is taking a post-graduate course.——Dr. William T. Edwards, Avilla, has moved to West Plains, where he will take over the practice of Dr. Henry C. Shuttee, who has located in El Reno, Okla.

Smallpox is epidemic in Independence. It is said that there are more than 100 cases there, that the houses where smallpox exists are not placarded and that there is no attempt at quarantine. The State Board of Health is considering the advisability of establishing quarantine in order to protect the surrounding territory and especially Kansas City. The warden of the State Penitentiary has notified the sheriffs throughout the state that on and after November 15 no prisoners will be received at the penitentiary unless they shall have been vaccinated at such time as to make it safe to admit them.

NEBRASKA.

Scarlet fever at Hyannis caused the public schools to be closed, October 28.

Typhoid fever is epidemic in Harrison township, Knox County, where there are now 35 cases.

Hospital to be Fireproof.—The State Board of Public Lands and Buildings has decided that the reconstructed Norfolk Hospital for the Insane shall be fireproof.

To control smallpox the State Board of Health has demanded that every physician in the state report to the Board by letter every case of smallpox coming under his notice, within 24 hours thereafter under pain of revocation of his certificate to practice.

Smallpox is epidemic on the Winnebago reservation, where 53 are already said to have died from the disease. It is said that 200 cases now exist and that the Indians have no adequate medical attention. The surrounding country maintains quarantine against the reservation.

Personal.—Dr. James A. Andrews, Eustis, who was injured by a kick from a horse three weeks ago, is slowly recovering at a sanatorium at Lincoln.——Dr. Fred E. McKeeby, Red Cloud, has decided to locate in Colorado, where his father is already in practice.——Dr. W. J. Ryan, Omaha, has located in Union.

NEW HAMPSHIRE.

Dr. Albert E. Brownrigg, for three years assistant physician at the New Hampshire State Hospital for the Insane, has accepted an appointment as resident physician at the Highland Spring Sanatorium, Nashua.

Personal.—Dr. John W. Staples, Franklin, has moved to Worcester, Mass.——Dr. James A. Day, Claremont, has located in Waltham, Mass.——Dr. George W. McGregor, Littleton, will spend the winter at Pinehurst, N. C., as house physician at the Carolina.——Dr. M. W. Work, Marlow, has located in Keene.——Dr. John L. Walsh, Concord, has opened an office in Proctor, Vt.——Dr. Francis W. Lamb, Tilton, has gone to New York, where he intends to devote several months to post-graduate study.

NEW YORK.

Scarlet fever has broken out in West Utica. In the last few days 14 cases have been reported.

Personal.—Dr. C. B. Albright, Williamson, has located in Keene, N. H.——Dr. William E. Curtin, Amsterdam, has opened an office in Cohoes.

New Oswego Hospital.—The plans for the addition to the Oswego City Hospital have been approved. The building will be 58 by 38 feet and will cost $25,000.

Diphtheria is epidemic at Greenfield, a small village near Findley's Lake. Several persons have died owing to a failure to use antitoxin promptly. Antitoxin is now being used freely, and it is hoped that no more deaths will occur.

Buffalo.

Dr. Ferdinand Henrotin, of Chicago, addressed the Obstetrical Section of the Buffalo Academy of Medicine concerning the diagnosis and treatment of the various forms of septic pelvic diseases.

Ptomain Poisoning.—Several cases of ptomain poisoning have been reported in this city, and in every case the source of the milk was derived from one milkman. The Health Department is investigating the cause of the trouble.

Smallpox Well Guarded.—There are two cases of smallpox at the Quarantine Hospital, both of which are doing well. Buffalo, with its many foreigners who congregated here during the Exposition, may well consider herself fortunate in the small number of cases reported, but we are by no means assured that all danger is over now that the Exposition is closed. The city would have been in a pitiable plight had an epidemic occurred, because through the selfish motives of the aldermen, Health Commissioner Wende's urgent appeal for a modern quarantine hospital was not acted on, and the present quarantine hospital is an excellent example of what a hospital should not be, and does not deserve to be termed a hospital. It is to be hoped that a modern quarantine hospital for the care and study of infectious and contagious diseases will be established by the municipality of Buffalo. Great credit is due Dr. Wende for guarding the city from smallpox. There were times when the city was spared from the ravages of this epidemic by his alertness.

New York City.

German Hospital, Brooklyn, has received an anonymous gift of $5000.

Dr. Edward Wallace Lee, formerly of Omaha, and for the last year in St. Louis, has located permanently in New York City.

Prospect Heights Hospital and Brooklyn Maternity.—Under this title the Brooklyn Maternity and New York State School for Training Nurses will henceforth be known. Failure to secure an appropriation from the city has necessitated this change.

New York Skin and Cancer Hospital.—Dr. L. Duncan Bulkley will deliver a series of clinical lectures on "Diseases of the Skin" in the out-patient hall of the hospital, on Wednesday afternoons, commencing November 6, at 4:15 p. m. The course will be free to the medical profession.

American Association.—We have received circulars, etc., sent out by a concern in New York City which calls itself the "American Association." It is evidently a kind of collection agency, especially soliciting membership from physicians. A correspondent suggests that we call attention to the fact that it has no connection whatever with the AMERICAN MEDICAL ASSOCIATION.

OHIO.

Smallpox.—Only six cases of smallpox remain at Newark. ——Findlay is threatened by a smallpox epidemic.

Personal.—Dr. Frank B. Humbert, Mount Liberty, has moved to Orrville.——Dr. Francis N. Pilcher, Guysville, has located in Columbus.——Dr. J. Milton Long, Zanesville, has moved to Massillon.——Dr. Steele, Frost, has located in Guysville.

Asylum Overcrowded.—On account of the overcrowded condition of the State Hospital for the Insane at Newark, the trustees of that institution have recommended an appropriation for the establishment of several new wards, including a special building for acute cases.

Physician Wins Suit.—Dr. Joseph D. Ely, Toledo, whose bill was contested on the allegation of malpractice in the treatment of an injury of the elbow-joint, was given judgment for the full amount of his claim with interest and costs in Judge Kenyon's court, October 25.

Diphtheria is increasing to an alarming extent at various points in the state. In Cleveland, 31 new cases were reported last week; in Youngstown, 32 cases have been reported, and in Columbus and Lima the disease is so prevalent as to bring prominently into notice the advisability of closing the public schools in the affected neighborhoods.

Newark Isolation Hospital.—The decision in the injunction proceedings against the Newark Board of Health, restraining it from establishing a hospital outside of the city, is that the smallpox hospital may be maintained north of Newark until the six patients confined therein shall have recovered. No new patients can be taken into the hospital there after October 25. If any cases occur after that date the Board of Health must provide a hospital for them within the corporate limits of the city.

PENNSYLVANIA.

The estate of the late Dr. Jeremiah S. Trexler, Kutztown, is valued at $100,000.

Scarlet fever has caused the closure of the Howellville school in Tredyffin township.

Staff Entertained.—The medical staff of Pittston Hospital was given a sumptuous game supper by Dr. John B. Mahon, president of the Hospital staff, October 27.

Hospitals Hampered by New Law.—The Presbyterian Hospital of Pittsburg and Allegheny is greatly overcrowded, and although it has a fund of $40,000 toward a new building it can not proceed with the work on account of the new state law relating to the building of new hospitals in cities. The same law has prevented the erection of the new United Presbyterian Hospital at Allegheny for which land valued at $100,000 was recently donated, and which already has funds in hand for the erection and maintenance of the institution.

Personal.—Dr. John J. Light, who spent the summer in post-graduate study at Johns Hopkins University, has returned to Schaefferstown.——Dr. Robert Lee Finn, Greenfield, who, rather than pay a fine, served a month in the Erie County Jail for illegal practice, and has returned to Greenfield and defiantly commenced practice, and now, as a result, he is to be tried on a similar charge at the next term of the court of quarter sessions.——Dr. Lloyd Sallade, Williamsport, has been appointed to the resident staff of the Scranton Hospital.——Dr. Horace B. Heysham has opened an office at Norristown.

Philadelphia.

President of German Hospital.—Mr. Herman Hessenbruch has been unanimously elected president of the German Hospital, vice John D. Laukenan, deceased.

A Convenient Location.—The site for the municipal emergency hospital to be erected is in the poor burying ground, in the new Camden Cemetery, where a similar hospital was erected during the last smallpox epidemic. Four buildings will be put up at once. It has not yet been decided whether or not to remove the present smallpox patients to the hospital, but any new cases that develop will at once be taken there.

Vaccination Urged.—At the last meeting of the Philadelphia Medical Society the following resolutions were adopted: "Whereas, smallpox is prevalent in the city of Philadelphia to an extent that warrants every precaution being taken to prevent an epidemic with the advent of cold weather; and, Whereas, we possess in vaccination an absolute safeguard against the disease; Therefore, be it resolved that the Philadelphia County Medical Society, representing the physicians of the City and County of Philadelphia, strongly indorse vaccination and urges upon every one not recently vaccinated to avail himself of the great protective power of this procedure."

TENNESSEE.

Cornerstone Laid.—The cornerstone of the new building for the Medical Department of U. S. Grant University, Chattanooga, was laid with appropriate ceremonies, October 29.

The Health of Memphis.—The twenty-second annual report of the Memphis Board of Health shows remarkable progress in sanitation. Within the last decade the death-rate has been yearly reduced. But in the report just issued the death-rate is 5 per cent. lower than during the previous year. There were but 35 cases of diphtheria with 5 deaths and 93 cases of scarlatina with 5 deaths.

Personal.—Dr. Michael Campbell, superintendent of the Tennessee Eastern Hospital for the Insane, has been unanimously re-elected for a term of eight years.——Dr. Clio B. Collier, of the staff of the State Hospital, Knoxville, has resigned and will locate in Washington.——Dr. Payne A. Tinsley, Dandridge, has succeeded the late Dr. James A. Harris as physician of Jefferson County.——Dr. J. B. Layman has opened an office in Knoxville.

State Board of Health.—The State Board of Health, which met recently at Nashville, heard Secretary Albright's report, which showed there had been in the state between April 1 and September 12, 2,059 cases of smallpox and 94 deaths. Of these cases 861 were white. Shelby and Davidson counties, the report says, are, for the first time in years, free from smallpox. Scarlet fever of a very mild type exists in a number of counties. A resolution was adopted pertaining to tuberculosis, anthrax and glanders, which are said to exist in several sections of the state among the lower animals. The resolution asserts that these diseases may be communicated to the human race, and gives notice that all persons are prohibited from selling milk or other dairy products intended for human food from cattle infected with these diseases.

GENERAL.

Ankylostoma Duodenale in Hawaii.—Executive Officer Pratt has issued a letter to each Government physician indicating the prevalence of severe cases of anemia (Egyptian chlorosis) due to the parasite ankylostoma duodenale. He suggests large doses of thymol, and that reports of its effect be sent to him in each case.

Precautions Against Plague Introduction.—The quarantine authorities of the United States and Canada are taking the necessary precautions against the introduction of the bubonic plague from the infected ports of Europe. The National and State officials will co-operate and exert every effort to prevent its introduction.

Manila Medical Society.—The new Society is meeting with opposition from the Collegio de Medicos y Pharmceuticos. The members of that school claim that no new medical society is needed. There is a so-called society of physicians and pharmacists already in existence, but it is claimed that there have been but two or three meetings of the body within two years, and then only for the purpose of discussing politics and not questions of importance to the profession with which the members of the society are supposed to be identified. It will be readily seen that a new medical organization is sadly needed. It is the intention of the new Society to hold semi-monthly meetings for the purpose of discussing questions pertaining to the practice of medicine and surgery. As a well-known army surgeon remarked: "When a Filipino graduates his studies are over. He does not keep abreast of the times. The physicians of Manila, outside of the Americans and one or two whom I have in mind, are many generations behind the times. They know practically nothing whatever regarding the modern practice of surgery and medicine. They have taken no steps to investigate the diseases of the tropics. Especially has this been the case in regard to dysentery. Very little is known regarding amebic dysentery, and what little is known has been discovered by American practitioners. If the local doctors had made a study of this disease ten years ago, there is no doubt that we would know how to cope with it successfully by this time." The new society will publish a monthly medical journal, in which will appear the proceedings of the Society at the various meetings as well as original articles by the members of the Society.

CANADA.

Smallpox has appeared at Winnipeg; over seventy cases have been reported at Ottawa.

Health Report of Toronto.—The following are the figures for contagious diseases for October: Typhoid, 16; scarlet fever, 69; diphtheria, 71.

Dr. R. O. Raymond, one of the oldest practitioners of Montreal, died last week. He was 74 years of age, and had been practicing in that city for fifty years. For some years he was the official physician of the Montreal gaol.

British Columbia Fears Smallpox.—Advice from Rossland dated October 29 states that considerable alarm is felt at many points near the international boundary line owing to the existence of an epidemic just across the border. Dr. Sinclair, the Dominion health officer for this district, has been advised of the outbreak and is having quarantine officers appointed to assist him in his work while the epidemic continues.

Incurable Children.—The annual meeting of the Toronto Home for Incurable Children was held last week. The annual report showed that the Home was progressing favorably. During the past year 6 children were admitted; and the number at present being cared for is 11. The treasurer's report showed

that donations to the extent of $1500 had been received during the year. The board of medical attendants was re-elected.

The Chinese vs. Health.—An action has recently been tried at Vancouver before the Chief Justice of British Columbia and a jury, brought by a chinaman against a health inspector for breaking into his house in the performance of his duty. The judge and jury upheld the action of the health inspector on the ground that the laws of the Board of Health with regard to "lodging houses" showed that the inspector was within his rights. The action was for $1000 damages.

Osteopaths and Christian Scientists.—Two trials are at the present time proceeding at Toronto, one against an osteopath and the other against a "christian scientist," the latter charged with manslaughter, his child having died without medical attendance, from diphtheria. In the case of the osteopath, an inquiry is being made into the death of a young woman in his office, who died suddenly, and who was undergoing treatment for a very large goiter.

Quebec Municipal Councils and Vaccination.—In consequence of outbreaks of smallpox multiplying in the Province of Quebec, the Provincial Board of Health has ordered that municipal councils shall see that industrial establishments shall require all persons in their employ to be vaccinated who are not able to show they were successfully vaccinated within the past seven years. The executive officer of all the municipal sanitary authorities has also been ordered to see that directors of all educational institutions shall satisfy the board of health that their charges have been successfully vaccinated.

Ontario September Deaths.—A short time ago the Ontario Board of Health sent out warnings to the clerks of the different municipalities cautioning them to make monthly health returns. The effect of this has been salutary, as for September, 99 per cent. of the population has been accounted for, which means that 770 out of 777 municipalities have been summed up. The total deaths for the month were 1959. This is an increase of 31 over August, but a decrease of 531 in comparison with September of 1900. The deaths from contagious diseases were as follows: Scarlet fever, 13; diphtheria, 45; measles, 2; whooping cough, 17; typhoid, 41; consumption, 165.

FOREIGN.

Surgeon-General W. Taylor, M.D., C.B., has been appointed Director-General of the British Army Medical Service.

Obituary.—The death is reported from St. Petersburg of Marcel Nencki, well known for his researches and discoveries in biologic chemistry and numerous contributions to medical literature.

New Schools of Tropical Science.—Germany has recently started a school for the study of tropical medicine, and the French government has decided on the establishment of two, in Paris and Marseilles.

Legacy for the University of Leipsic from Physician's Estate.—The widow of the late professor of the history of medicine at Vienna, Dr. Puschmann, has bequeathed her entire property, about a quarter of a million dollars, to the University of Leipsic.

Koenigsberg Medical Course Closed to Women.—The Königsberg medical course is nominally open to women, but three professors, Stieda, Lossen and Pape have closed their lectures to women students, which debars them from completing the course.

Cancer Research Endowment.—A fund of 500,000 marks has been presented to the city of Frankfurt, Germany, for an endowment for research in regard to the etiology of cancer. Ehrlich and Weidenreich have been entrusted with the task, the latter summoned from Strassburg for the purpose.

Bubonic Plague in Great Britain.—The three cases of plague in Liverpool are reported convalescent in hospital. It has appeared again in Glasgow, where there has been one death; there are now three suspects in the latter city found in a station hotel belonging to the Caledonian Railroad.

German Association for the History of Medicine.—Sixty persons interested in promoting the study of the history of medicine and the natural sciences, have organized an association for the purpose. The annual fee is ten marks. The treasurer is Dr. Emil Wohlwil, Hamburg. Dr. Peypers, of Amsterdam, editor of *Janus*, is one of the officers. The society will commence the publication of a periodical in 1902. Societies, institutes, libraries, etc., as well as individuals, are cordially invited to membership.

Special Article.

Fatal Results from Diphtheria Antitoxin in St. Louis.*

In reply to a request for information in regard to the deaths from antitoxin in St. Louis, Dr. Mac C. Starkloff, Health Commissioner of St. Louis, writes to THE JOURNAL under date of November 6: " . . . On the afternoon of October 26, I received a communication from a physician saying that he had under his observation two cases of tetanus which were undoubtedly caused by the diphtheria antitoxin furnished by the Health Department. I immediately ordered that the distribution of antitoxin be at once discontinued, and addressed a letter to Dr. Amand Ravold, our consulting bacteriologist, by whom our antitoxin is made, asking for information in regard to the production of antitoxin. I enclose a copy of his reply.

"Following the reports of death from tetanus claimed to have been produced by the antitoxin, I had a conference with Dr. R. M. Funkhouser, coroner, and an investigation was begun. Also a commission of expert pathologists, consisting of Drs. B. Meade Bolten, E. C. Walden and Carl Fisch, was appointed to make autopsies and examine the serum, a few bottles of which were found in the possession of several physicians.

"Up to the present date, as far as I have ascertained, there have been twenty cases of tetanus reported, following the use of our serum, with ten deaths. . . . The lot of diphtheria antitoxin labeled August 24 ran out on October 23, and the last dose of it was injected on October 24."

Report of the Bacteriologist.

The following is from the report of Dr. Amand Ravold, referred to above:

The horse from which the antitoxic serum labeled Aug. 24, 1901, was taken, was quartered at the Poor House stables. He was a bay horse, 16 hands high, weighed over 1600 lbs., and named Jim. Originally, he was an ambulance horse, had been injured in the shoulder, and was turned over to me by Dr. Jordan, chief dispensary physician, in 1898. He has been under treatment for the production of diphtheria antitoxin for nearly three years, has been bled a number of times and has furnished over 30,000 c.c. (30 quarts) of diphtheric antitoxin. In fact, the greater part of the antitoxin distributed by the Health Department during the years 1900 and 1901 came from this horse.

On August 10 he was inoculated with 800 c.c. of diphtheria antitoxin of a strength of 0.02. August 24, I bled him, taking 10,000 cubic centimeters (10 quarts) of blood. (The blood was kept in an ice chest 300 yards from the stable.) From this blood we obtained 2400 c.c. of serum, which was brought in from the Poor House, August 28 and 30. I personally added 0.4 per cent. tricresol to the serum, allowed it to stand for twenty-four hours, drew off 10 c.c. and tested it on six guinea-pigs to ascertain its antitoxic value. It was found to contain between 150 and 200 units to the cubic centimeter and was labeled 1500 units to 10 c.c. None of these guinea-pigs died either of diphtheria or tetanus, although the 200 unit pigs were sick for several days. It was bottled about September 10, and the distribution began. From that date until October 26 no other serum was given out to physicians.

From October 23 to 26 we ran out of serum. On October 18 Mr. Taylor called my attention to the fact that our serum was running low and that an unusual demand was being made for it. I gave instruction that not more than one bottle be given to any applicant until a new lot of serum could be obtained.

On September 22 I again injected Jim with 300 c.c. of strong diphtheria toxin, and on September 30 bled him, taking 8000 units of blood. On October 2 I was notified by telephone that Jim was sick, and Dr. Ellis, veterinarian of the Health Department, was sent out to see him. He pronounced the horse sick with tetanus and ordered him killed. The serum from the horse was sent to the City Chemist's laboratory October 8 or 9, while I was in Chicago; tricresol was put in it by my assistant, Mr. Schmidt. On my return, October 11, Mr. Taylor brought two flasks containing antitoxin, and said that it came from the Poor House while I was away. It was the serum from the dead horse. I emptied one flask and Mr. Taylor the

* This report was received after the editorial on this subject was on the press. The latest newspaper reports at this writing, Nov. 7, state that 13 deaths have occurred from the use of the antitoxin.

other into the laboratory sink. On October 26, we received information from Dr. Jordan that a case of tetanus was said to have been caused by the city antitoxin.

A search was made for some of the August 24 serum. Two bottles were found in the City Dispensary on Sunday, October 27, and turned over to Mr. C. A. Snodgras to search for the bacillus of tetanus. He will report to you when his investigation is completed.

A bottle of serum is in the possession of Dr. Johnson, of the dispensary staff, and one in your possession. I earnestly advise that one of the bottles of serum be given to Dr. E. C. Walden and the other to Dr. Meade Bolten, of this city to ascertain whether or not the serum contains the bacillus of tetanus or the toxins of tetanus. Both are bacteriologists and thoroughly reliable men.

Preparation of Antitoxin.—Our antitoxin is prepared as follows: For obtaining the diphtheria toxins, we inoculated a specially prepared broth with bacillus diphtheriæ No. 8 of Park, and grew it in an incubator at 37 C. for from eight to ten days. At the end of that time it is taken from the incubator; 0.4 per cent. of tricresol is added to it, and after standing for twenty-four hours is filtered through a porcelain filter. Small quantities are injected into guinea-pigs, in order to ascertain its toxic potency. If the toxin proves highly virulent, it is injected into horses in gradually increasing doses.

Strong, healthy horses are selected, free from glanders and tuberculosis; about once every ten days increasing quantities of toxin are injected subcutaneously into them; the site of the injection being the side of the neck or the loose tissue behind the shoulder blade. Here the hair is clipped short and the hide first washed with soap and water and then soaked with a powerful disinfectant, consisting of a 5 per cent carbolic acid solution containing one to 1000 corrosive sublimate and a 0.5 per cent of hydrochloric acid. The injection is made with a sterile syringe. When the horse can give large quantities of diphtheria toxin without producing decided elevation of temperature or other disturbances of health, he is ready to bleed. Our method is to shave a wide area along the side of the neck over the jugular vein; this area is thoroughly disinfected with the acid (carbolic acid solution mentioned above) and with a sterile knife an incision is made through the skin over the vein. A sterile sharp pointed canula with a rubber tube attached to it, is thrust through the incision into the vein beneath, and the blood flows through the tubes into specially constructed flasks, which have been steam serilized. The wound in the skin is stitched up and flexible collodion painted over it.

The blood put in an ice chest is allowed to clot, and when the serum separates, which takes several days, it is poured off and to it is added 0.4 per cent. of tricresol. After standing several days to "ripen" it is filtered through a sterile paper filter, and the filtered serum is mixed in definite quantities with ten times a minimal lethal dose of diphtheria toxin. The mixture is injected into guinea-pigs weighing 300 grams, to ascertain the quantity of serum which will keep the guinea-pig from dying; ten times that amount of serum is an antitoxic unit. The number of antitoxic units in one cubic centimeter is then calculated and the serum labeled. Upon the label is written the day of bleeding and the number of units to 10 c.c. of antitoxin.

Before distribution, the serum is again filtered and put into small sterile bottles, each containing 10 c.c. of serum and corked with a sterile cork stopper. A label upon it bears the date of the bleeding and the number of antitoxic units in the bottle.

I go to this length in explaining our methods to show the rigid aseptic precautions with which the whole procedure is surrounded. In regard to myself, I have personally selected every horse from which we have made antitoxin. I have given every injection which the horses have received since the beginning of the work. I have bled the horses throughout the whole period of the investigation, and, further, I have with very few exceptions tested every lot of serum which has left the laboratory.

Feeling keenly the very great responsibility which has rested upon me, I have been painstaking in my endeavors to produce a high grade of antitoxin serum, and have trusted no part of the procedure to anybody, except the preparation of the diphtheria broth, which my assistant, Mr. Martin Schmidt, skilfully makes for me, and the filling of the small bottles with serum, which is the work of our careful janitor, Henry Taylor.

The horse Jim seemed to be in perfect physical condition when I bled him on August 24 and September 30. The bleeding on September 30 was followed by a decided reaction; on the following day he refused food and began breathing with difficulty. Dr. Ellis pronounced him sick beyond recovery, with tetanus, and he was killed.

I feel confident that the tetanus bacillus will not be found in the serum, both from the painstaking care with which it is prepared and from the fact that it contains 0.4 per cent. of tricresol. It is, however, within the limit of probabilities that the horse may have had the tetanus bacillus latent, or slowly acting within him some time before August 24, and that the disease did not develop sufficiently to manifest itself until his vitality was lowered by the bleeding of September 30. If this were so, the tetanus toxin might have been in his blood on August 24, the date of the bleeding. If the tetanus toxins were in the horse's blood prior to August 24, it was beyond the range of human knowledge to detect it by an inspection of the animal.

It is a well-known fact that horses undergoing treatment for the production of diphtheria antitoxin are highly susceptible to infection with the bacillus of tetanus. We have lost six antitoxin horses with tetanus since 1895.

Very respectfully, [Signed] AMAND RAVOLD, M.D.
City Bacteriologist.

Correspondence.

A Place to Clean the Teeth Needed in Railroad Car.

PITTSBURGH, PA., Oct. 28, 1901.

To the Editor:—Apropos of the much discussed question of the spitting nuisance, the attention of the managers of the sleeping car companies should be called to the practice of cleaning the teeth and spitting in the bowls of the washroom, in violation of every principle of decency, good taste and sound hygiene. A sign in conspicuous form and in unmistakable terms, should be placed in the lavatories of sleeping cars, positively forbidding spitting, cleaning the teeth or blowing the nose in the washbowls. Nothing more unpleasant can be imagined than to witness the actions of the unclean animal, as he performs his morning ablutions, brushing his teeth and spluttering and snorting over the bowl. One's gorge rises at the sight, when a person reflects that he must wash in the same place or forego the comfort of having the facilities of keeping clean. The thought of washing in a bowl into which the person who has preceded has deposited various secretions and vile impurities from his teeth, mouth, nose, throat and bronchi, would be quite enough to deter many persons from using the lavatories at all. It is not only the filthiness of it all, but the actual danger from this practice that calls for immediate correction. It is no imaginary evil when subjects of phthisis, nasal catarrh, ozena, bronchorrhea and syphilitic disease deposit the secretions from the mouth and nose into these receptacles.

Not long since, the writer witnessed one of the occupants of a sleeper taking his morning wash. He not only cleaned his teeth in a very painstaking manner over the bowl and blew his nose repeatedly into the basin, but to complete this part of his toilet, he took from his satchel a piece of whalebone in the form of a horseshoe, and placing this instrument across the posterior surface of the tongue, thoroughly scraped that member a number of times, the decomposed epithelium and debris from the dorsum of the tongue being deposited in the bowl, where he had already blown his nose, cleaned his teeth and cleared the secretions from his throat.

The cleaning of the teeth is a very necessary and important part of the morning toilet, and certainly the art that enters into the modern sleeping car can easily solve the simple problem involved in this necessity. The sleeping car is a veritable wonder of ingenuity, and provision can be made no doubt for the cleaning of the teeth, and afterwards no one should be permitted to use the bowls for such a purpose.

It is one of the unexplainable things, that this practice should ever have been tolerated; for the first man who blew his nose or expectorated into the receptacle where other people had to wash their faces, should have been ejected from the car.

Yours respectfully, HENRY D. FULTON, M.D.

Report of Autopsy on Assassin Disclaimed.

NEW YORK CITY, Nov. 2, 1901.

To the Editor:—It has come to my knowledge that an account purporting to be a report of the autopsy performed upon the assassin Czolgosz has in a manner been placed upon the market and offered to various medical journals. To prevent other periodicals from being misled I beg to inform you that no authentic report has as yet been issued, and that none is authentic or reliable unless signed by Dr. Carlos F. MacDonald or myself, or both jointly. Since the alleged report is based upon a series of disjointed data dictated by me to a stenographer in whom I reposed confidence and who had no permission to give out any portion of it, it is necessarily valueless and unintelligible and possibly misleading. As may be readily understood, these notes were made as aids to the memory and to supplement other notes in my sole possession and hence are useless unless corrected and revised by myself.

Should it happen that any garbled rendition be published, Dr. MacDonald and myself will feel it necessary to repudiate and disclaim it. Very sincerely yours,

EDWARD A. SPITZKA, M.D.

Ether to Make Criminals Talk.

WEEHAWKEN, N. J., Oct. 30, 1901.

To the Editor:—Allow me to propose a new use of ether. In the case of condemned criminals, who refuse to talk and thus implicate their confederates, put them under the influence of ether in much the same way that patients are prepared for surgical operations. Ether, given in a certain way and quantity, will cause otherwise silent people to talk. While thus intoxicated with ether it is not unlikely that the criminal will give some clew as to his confederates. The ether should be carried only to the stage of stimulation, not of profound anesthesia.

At a time during the stage of stimulation the will power is in abeyance and the door of the mind is unlocked. When this period is reached the tongue is free to tell the most secret things. This stage may be prolonged for ten or twenty minutes, or for a longer time, by the judicious use of other stimulants. Very truly yours, ALBERT W. WARDEN, M.D.

Married.

C. E. DRAKE, M.D., to Miss Garnet Dumm, both of Zanesville, Ohio, October 24.

GEORGE THEODORE MUNDORFF, M.D., to Minnie Grau, both of New York City, October 30.

HARRY E. PETERMAN, M.D., to Miss Helen Louise Meyer, both of Baltimore, October 23.

E. M. WHITTEN, M.D., to Miss Georgia Weiner, both of Nebraska City, Neb., October 25.

C. T. ESTABROOK, M.D., to Miss Edith L. Tourtellotte, both of Worcester, Mass., October 24.

THOMAS C. BUSSEY, M.D., Texas, Baltimore County, Md., to Mrs. Augusta E. Gorman, of Baltimore, October 23.

ARTHUR CHAPMAN DOTEN, M.D., Worcester, Mass., to Miss Ethel Sturdivant Norton, of Portland, Maine, October 23.

Deaths and Obituaries.

William M. Hudson, M.D., Jefferson, 1855, died at his home in Hartford, Conn., October 30, aged 68. For the last twenty years he had been stockholder auditor of the New York, New Haven and Hartford Railroad Company and had held a number of important public positions.

E. L. Diefenderfer, M.D., University of Pennsylvania, Philadelphia, 1862, a prominent practitioner of Milwaukee, died at his home in that city, October 27, from malignant disease of the intestines, after an illness of a year and a half, aged 62.

John D. Dunning, M.D., University of Buffalo Medical Department, Buffalo, N. Y., 1852, died October 27, at his home in Webster, N. Y., aged 75. He was one of the charter members of the New York State Medical Association.

J. Mortimer Crawe, Sr., M.D., Jefferson Medical College, Philadelphia, 1859, the oldest practicing physician of Watertown, N. Y., died there October 29, aged 71. He was a member of the New York State Medical Association.

Dennis W. Porter, M.D., Rush Medical College, Chicago, 1878, who had practiced in Stonington and Blue Mound, but moved recently to Decatur, Ill., on account of ill-health, died at his home in that city, October 23.

Peter Hewetson, M.D., one of the oldest physicians of Ohio, who had practiced in Amanda, Ohio, for half a century, died at his home in that place, October 26, from heart trouble after a brief illness, aged 79.

R. D. Blackmore, M.D., University of Iowa, Iowa City, 1901, a surgeon in the employ of the Rock Island extension in Texas, died at the University Hospital, October 26, from typhoid fever, aged 27.

J. Arthur Fullenwider, M.D., Barnes Medical College, St. Louis, 1900, located in Champaign, Ill., died at St. Luke's Hospital, Chicago, after an operation for appendicitis, October 23, aged 25.

Robert T. Bush, M.D., New York University, 1865, died at his home in Gallatin, Tenn., October 27, aged 65.

Miscellany.

Reduction of Temperature by Continuous Irrigation of the Rectum.—A recent Geneva inaugural thesis describes the results of experiments on dogs to determine whether the temperature of the body can be influenced by double current irrigation of the rectum. Two urethral sounds were used for the purpose, with water at 75 F. The temperature in the axilla was reduced constantly in healthy dogs from two to nearly four degrees in the course of forty minutes of this irrigation. Further tests showed that the same results were attained whether the water was at the temperature of the body or above it and whether the irrigation was prolonged more or less than forty minutes. The results indicate that the influence on the temperature is of a reflex nature. In fourteen out of sixteen dogs rendered febrile by the subcutaneous injection of pus or putrid matters, the temperature was influenced the same as in the healthy dogs, with two exceptions. It returned to normal in all cases in the course of one or two hours. The double current irrigation proved perfectly harmless in all the numerous tests.

Pawlow's Latest Researches on the Digestive Processes.—Pawlow's researches on dogs provided with a gastric fistula made in such a way as to simulate natural conditions, have elucidated so many obscure points in our knowledge of the processes of digestion, that he was awarded the Nobel prize of $50,000 as recently announced in THE JOURNAL. His latest studies have established that the second or chyme period of digestion is induced by a reflex of gastric origin, and that the stomach possesses an auto-regulating mechanism. When a sufficient amount of hydrochloric acid has been secreted, it exerts an inhibiting action on the gastric secretion. His experiments for the study of the bile were on dogs with intact biliary passages. The portion of the intestine containing the orifice of the common bile duct was fastened to the abdominal wall, opening outward. He found that the flow of bile is intermittent, and that only fats, the products of the digestion of albumin and the extractives of meat have the power to induce the secretion of bile. He has also established that the bile has an inhibiting action on the gastric juice, while it promotes the action of the pancreatic juice and especially of the saponifying ferment in this juice. It, therefore, serves as an intermediary between the gastric and the pancreatic digestion. The pancreatic juice is the stimulant par excellence of the intestinal juices. He has also found that the reflex which regu-

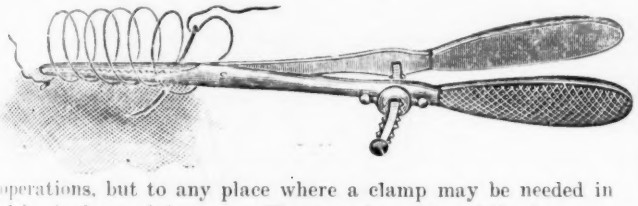
lates the passage of food from the stomach into the duodenum is of a chemical rather than a mechanical order. The reflex follows the entrance of the acid chyme into the duodenum. He was able to cause an alkaline solution in the stomach of a dog to be retained indefinitely by instilling diluted gastric juice or hydrochloric acid into the duodenum. The stomach emptied itself at once, if, instead of the acid, an alkaline solution was instilled. This mechanism is evidently designed to prevent the passage of too large amounts of gastric juice into the intestines, as its acidity would inhibit the action of the pancreatic juice. The ingestion of food has a similar inhibiting action on the evacuating movements of the stomach. They occur even during fasting, but cease after the ingestion of food for an interval long enough to allow it to undergo the necessary modifications. Application of irritants to the surface of the stomach induces an enormous secretion of mucus, free from pepsin, destined to protect the walls of the stomach and aid in the elimination of the irritating substance or render it harmless by a coating of mucus. The ingestion of meat stimulates exclusively the pepsin cells to activity.

New Instruments.

NEW PILE CLAMP.

RUFUS D. MASON, M.D.
OMAHA, NEB.

I wish to briefly describe a new pile clamp that I have had made and used with great satisfaction. This instrument is lighter and neater than those commonly used, and yet is strong enough to withstand all the pressure required. Being made with smooth, tapering jaws, it is adapted not only to pile



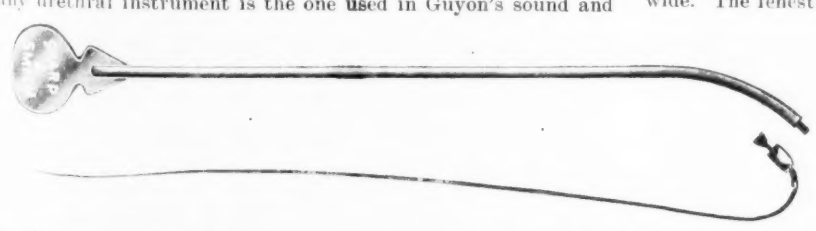
operations, but to any place where a clamp may be needed in abdominal or pelvic cases. The opposing edges of the jaws are notched to secure good holding qualities. The cut shows the method of using it in the continuous suture operation for piles. For cautery operations it is simply perfect.

AN IMPROVED METHOD OF ATTACHING A METALLIC SOUND TO A FILIFORM BOUGIE.

HENRY G. ANTHONY, M.D.
CHICAGO.

In the treatment of tight strictures it is frequently desirable to pass a metallic sound, catheter, or lithotomy staff attached to a flexible filiform guide rather than employ tunneled instruments or Bang's whalebone bougie.

The device now employed for attaching a filiform guide to any urethral instrument is the one used in Guyon's sound and



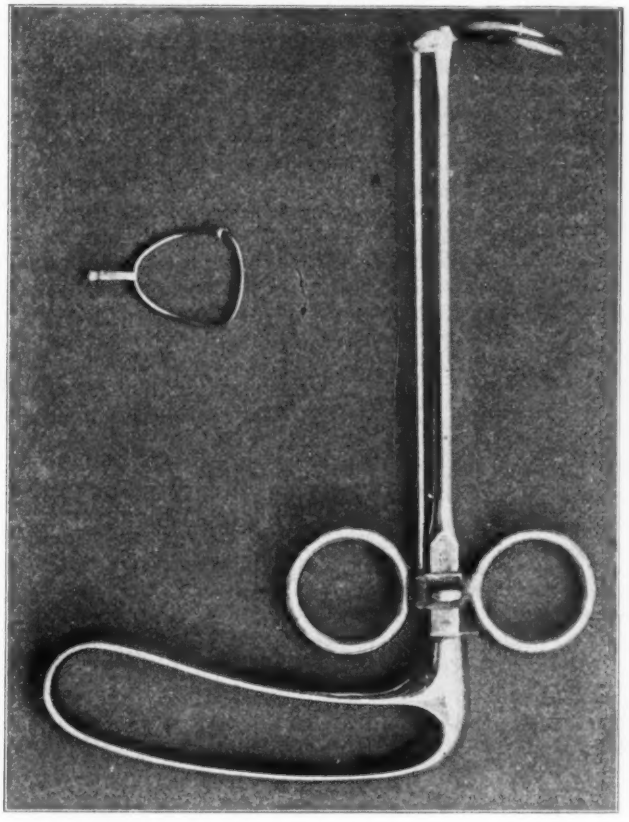
in Maisonneuve's urethratome. A metallic tip threaded onto the end of the filiform is screwed into the end of the sound. This method of attachment is insecure and unsafe. Cases are on record in which filiforms have become detached in the bladder necessitating surgical operation.

To obviate this danger I had the tip of a sound cut off and bored through so that after a filiform has been passed through the tip it may again be screwed onto the end of the sound. Only the best imported filiforms with large heads should be employed and the sounds should be of the Otis or Ultzmann curve.

A NEW ADENOID CURETTE.

W. STANLEY SAMSON, M.D.
LANCASTER, OHIO.

The accompanying illustration shows a new adenoid curette, constructed on different principles from other sharp or dull curettes used in adenectomy. The main shaft of the instrument is 14 centimeters long, attached to a pistol grip. Upon the shaft rests a slide with two rings for the index and second fingers. To the slide is attached a second shaft, by means of which the blade can be moved 45 degrees forward and backward when traction is made upon the rings. The blades, two in number, resemble the Gottstein blade in general conformation. The dull blade has no cutting edge; the horizontal portion is round and the size of a No. 16 piano wire.



The knife blade resembles the blade of the Gottstein curette very closely, excepting the knife, which is only 2 millimeters wide. The fenestra of each blade is 16 millimeters transversely and 20 millimeters longitudinally. The dull blade is to be used on soft growths and especially in children of but a few years; the knife blade is for tough and highly organized adenoid tissue. The cardinal feature of the instrument is that the shaft can be maintained at the same relative position, and the blade brought against the choanæ and then swept over the vault, embracing the largest growths; by greater traction on the rings the blade is brought against the pharyngeal wall and by an upward movement of the hand the cutting edge is carried as low as desired. The procedure may be repeated as often as necessary without removing the instrument from the nasopharynx. The instrument is aseptic, and the blades are interchangeable.

Book Notices.

TRANSACTIONS OF THE MEDICAL ASSOCIATION OF GEORGIA. Fifty-second Annual Session. 1901. Atlanta, Ga.: Published by the Association.

The Secretary's report shows that the membership of this Association is 460 in good standing, with 150 on the list who are not in good standing, these being back in their annual dues. This represents about one in six of the regular members of the profession in Georgia who belong to the State Association. The report of the Committee on Medical Legislation is an interesting document. It illustrates the oft-repeated assertion that the profession wields a great political influence when it can be aroused to act. The osteopaths made a big fight for a bill in the Georgia Legislature and the committee representing the State Association sent out earnest and repeated appeals by mail and otherwise, urging the members of the profession to use their personal influence with the members of the Legislature. The result was noticeable and the osteopath bill was decisively beaten. The committee says: "It was pleasing in the highest degree to observe the power of the three thousand doctors of this State when fully aroused and united for a common purpose. This experience illustrates in a striking manner the potency of this influence when properly directed, and it is devoutly hoped that this object-lesson may not be underestimated or forgotten." We, too, hope that this object-lesson will not be forgotten, but we are afraid it will be. Committees in like work in other states during the last two or three years have had a similar experience to that of our friends in Georgia, but it can not be reiterated too often that when the medical profession unitedly uses its influence for any political purpose, it succeeds. The volume contains 32 papers read at the last meeting, together with the Constitution and By-Laws of the Association, the Code of Ethics of the American Medical Association, and a list of the members of the Medical Association of Georgia.

SURGICAL TECHNIC. A Text-Book on Operative Surgery. By Fr. von Esmarch, M.D., Professor of Surgery at the University of Kiel, and E. Kowalzig, M.D., Late First Assistant at the Surgical Clinic of the University of Kiel. Translated by Professor Ludwig H. Grau, Ph.D., Formerly of Leland Stanford University, and William N. Sullivan, M.D., Formerly Surgeon of U. S. S. *Corwin*. Edited by Nicholas Senn, M.D., Professor of Surgery at Rush Medical College. With 1497 Illustrations and 15 Colored Plates. Cloth. Pp. 866. Price, $7.00. New York: The Macmillan Co. 1901.

As its title indicates, this book is on technic only. As such, it has become recognized as the best in any language, and to the publishers, translators and editor, American and English surgeons owe a debt of gratitude. The translators have done their work well. Occasionally the peculiarity of the German idiom shows itself, but not often enough to mar the English, even for the most fastidious. No better man could have been selected to edit the work than Dr. Senn, and his additions in brackets add to its value. If we were asked in what this surpassed other works on surgical technic, we should reply: in recognizing the value of the smallest detail, in its wealth of practical illustrations, and in the conciseness and precision of its language. *Kurtz und buendig* was the motto adopted by the author in writing the original work in the first instance, which, by the way, was a prize essay. The book will prove to be the most valuable addition to English surgical literature of the year.

A TEXT-BOOK OF THE PRACTICE OF MEDICINE. By Dr. Herman Eichhorst, Professor of Special Pathology and Therapeutics, and Director of the Medical Clinic in the University of Zurich. Translated and edited by Augustus A. Eshner, M.D., Professor of Clinical Medicine in the Philadelphia Polyclinic. Two octavo volumes of over 600 pages each; over 150 illustrations. Price, per set, Cloth, $6.00 net. Philadelphia and London: W. B. Saunders & Co. 1901.

Dr. Eshner has done good service to English-speaking readers in his translation of this standard text-book of that distinguished German author, Eichhorst. He has made additions and annotations where it seemed advisable. The two volume form in which the book appears does not lessen, but rather adds to its value, as the two single volumes are more convenient for use than one large one would be. The translation appears to be excellent, though once in a while we see a slip. We do not know whether to give credit to the translator or not for a confusion of the animal and vegetable kingdom on page 395; the statement that "hemoglobinuria has been noticed after ingestion of fungi, particularly mussels," strikes us as odd. This, however, is a minor matter and does not affect the general excellence of the work. The editor has introduced a number of illustrations, replacing or supplementing those in the original text, which add to its value.

INTERNATIONAL DIRECTORY OF LARYNGOLOGISTS AND OTOLOGISTS. By Richard Lake, F.R.S.C., England. Published under the auspices of The Journal of Laryngology, Rhinology and Otology, Rebman, London. 1901.

This little book contains the names and addresses of practitioners engaged in the study and practice of Laryngology and Otology and is intended to cover Europe, Africa, Asia, Australasia and North and South America. This is the second and an enlarged edition. It contains many names, but unfortunately has not been edited with sufficient care to enable one to distinguish between those who have a good standing in the profession as Laryngologists and Otologists and many others who pose in this light without sufficient qualification. However, it serves a most useful purpose in giving us the correct names and addresses of those whom we know by their writings. It is manifestly impossible to make such a directory perfect. We may, therefore, commend the author for what he has accomplished, while hoping for something better in another edition. If the author had indicated by reference, letters or numbers, all the society affiliations of each physician named it would have given the reader a fairly good idea of their professional standing and it would not have materially increased the size of the book.

SURGICAL EXPERIENCES IN SOUTH AFRICA, 1899-1900. Being Mainly a Clinical Study of the Nature and Effects of Injuries Produced by Bullets of Small Caliber. By George Henry Makins, F.R.C.S., Surgeon to St. Thomas' Hospital, London. Cloth. Pp. 493. Price, $4.00 net. Philadelphia: P. Blakiston's Son & Co. 1901.

This work is a valuable contribution to military medicine. The author has utilized his experience most thoroughly and it would be hardly possible for any surgeon who has to deal with gunshot traumatisms, and especially military surgeons, not to derive benefit from its perusal. It seems to us one of the most valuable medical contributions that has appeared upon recent military operations. The book is elegantly illustrated, and gracefully written. The author gives illustrations of the various missiles, showing some taken from captured cartilages that have evidently been tampered with to make the wound more deadly. He does not, however, credit all the accusations that have been made as to the use of explosive bullets. The treatise is one that will be likely to be referred to by almost all military surgeons, at least while gunshot wounds are caused in war or until methods have changed in a way that we can not at present conceive.

A HANDBOOK OF PATHOLOGICAL ANATOMY AND HISTOLOGY, with an introductory Section on Postmortem Examinations and the Methods of Preserving and Examining Diseased Tissues. By Francis Delafield, M.D., LL.D., Professor of the Practice of Medicine, College of Physicians and Surgeons, Columbia University, New York, and T. Mitchell Prudden, M.D., LL.D., Professor of Pathology and Director of the Department of Pathology, College of Physicians and Surgeons, Columbia University, New York. Sixth Edition with 13 Full-page Plates and 453 Illustrations in the Text in Black and Colors. Cloth. Pp. 819. Price, $5.00. New York: Wm. Wood & Co. 1901.

This excellent work has long been a standard and each succeeding edition makes its popularity among medical students, whether young or old, more secure. The present issue has been produced under the supervision of the junior author, Dr. Delafield having retired from an active share in its preparation.

To keep the work well abreast with advancing knowledge, some of the chapters have been entirely rewritten and every part, where necessary, has been revised so as to bring the subject matter well up to date. Many new illustrations have been added and evidently great pains have been taken on the part of both author and publisher to make the work as perfect as possible in every detail.

A Text-Book of the Practice of Medicine. By James M. Anders, M.D., Ph.D., LL.D., Professor of the Practice of Medicine and of Clinical Medicine, Medico-Chirurgical College, Philadelphia. Fifth Edition, Thoroughly Revised. Cloth. Pp. 1297. Price, $5.50 net. Philadelphia and London: W. B. Saunders & Co. 1901.

Dr. Anders is to be congratulated on the fact that five editions of his text-book have been called for in less than four years. The reason for this popularity is that the book is written with a full grasp of the necessities of the general practitioner. The latter has found it to be just what he wants, not only in that it covers the various subjects fully in detail, but because the general plan is such that reference to any phase of the subject is easily and readily made. In this new edition the whole work has been brought fully into harmony with the present known facts and recent developments in medicine. Several chapters have been rewritten and some new subjects introduced.

Atlas and Epitome of Special Pathologic Histology. By Docent Dr. Herman Dürck, of the Pathologic Institute of Munich. Edited by Ludvig Hektoen, M.D., Professor of Pathology in Rush Medical College, Chicago. Vol. II. Liver, Urinary Organs, Sexual Organs, Nervous System, Skin, Muscles, Bones. With 123 Colored Illustrations on 60 Lithographic Plates. Cloth. Pp. 192. Price, $3.00 net. Philadelphia and London: W. B. Saunders & Co. 1901.

This is another of the series known as "Saunders' Medical Hand-Atlases," books which have been well received by the medical profession of this country. This one on special pathologic histology is no exception to the other books of the series, which are practical and well illustrated expositions of the subjects treated. That the editor of the work is Dr. Ludvig Hektoen is sufficient to prove that from a scientific point of view the work is thoroughly reliable, up to date and in accordance with present known facts. The illustrations are very numerous, and all excellent.

The Ready Reference Handbook of Diseases of the Skin. By George Thomas Jackson, M.D., Chief of Clinic and Instructor in Dermatology, College of Physicians and Surgeons, New York. With 80 Illustrations and 3 Plates. Fourth Edition, thoroughly revised. Cloth. Pp. 642. Price, $2.75. New York and Philadelphia: Lea Brothers & Co. 1901.

This fourth edition of Jackson's diseases of the skin appearing in eight years of the first, shows its acceptability and in its present form it will be no less a success. The plan of alphabetical arrangement is a convenience to the reader and it forms one of the most handy text and reference books that we have seen. A number of new articles have been added on subjects not included in former editions, amongst which are acne keratosa, acne urticata, carate, craw-craw, endothelioma, etc. The illustrations are much the same as in the former works and call for no special mention.

Obstetric and Gynecolcgic Nursing. By Edward P. Davis, A. M., M.D., Professor of Obstetrics in the Jefferson Medical College, Philadelphia. Illustrated. Pp. 402. Price, $1.75. Philadelphia and London: W. B. Saunders & Co. 1901.

In the admirably clear way observed in his previous literary work, Dr. Davis takes up systematically the details of obstetric and gynecologic nursing, never invading the domain of the physician, but giving minute directions for the guidance of the nurse in normal and abnormal pregnancies, obstetric emergencies and the principal gynecologic operations. In an appendix a dietary with full directions for the preparation of foods is given, and also the methods of preparing surgical supplies and the methods and precautions of the Philadelphia Hospital. The book is satisfactorily illustrated and will be of value to all obstetric and gynecologic nurses, both in hospital and private practice.

Anesthetics and Their Administration. A Text-Book for Medical and Dental Practitioners and Students. By Frederic W. Hewitt, M.A., M.D., Cantab., Anesthetist to His Majesty the King. With Illustrations. Second Edition. Cloth. Pp. 528. Price, $4.00. London and New York: Macmillan & Co.

While this is stated to be a second edition, it is to all intents and purposes a new book. As it treats on general anesthesia only, the Schleich infiltration anesthesia, the various local anesthesias and spinal anesthesia are not mentioned. The information on the subject up to date is clearly and succinctly presented: The author considers the abolition of the stage of excitation the most valuable step in the evolution of anesthesia. Like most of the English authors, he advocates closed ether anesthesia, nitrous oxid and ether anesthesia.

Physicians' Clinical Chart and Fee Book. By Walter Key, M.D., Pilger, Neb. Leather. Price, $1.00.

This is a combination clinical chart and fee register, affording the practitioner not only opportunity for close study of the progress of his patients, but also a source of future reference, which is of no slight importance to the progressive physician. It is to be hoped that the copy for this excellent little book in future editions will be more carefully revised, and the proofs more critically read.

Urinary Diagnosis and Treatment. By John W. Wainwright, M.D., Member of the American Medical Association. Cloth. Pp. 111. Price, $1.00. Chicago: G. P. Engelhard & Co. 1900.

Dr. Wainwright's little book discusses, in addition to the material usually found in hand-books of this kind, the clinical significance of urinary findings and their practical application to the treatment of the diseases of which they are symptomatic.

Societies

COMING MEETINGS.

Oklahoma Territory Medical Association, Oklahoma City, Nov. 13, 1901.

Southern Surgical and Gynecological Association, Richmond, Va., Nov. 12-14, 1901.

Tri-State Medical Association of Mississippi, Arkansas and Tennessee, Memphis, Tenn., Nov. 19-21, 1901.

Western Surgical and Gynecological Association, Chicago, Dec 18-19, 1901.

Oklahoma Territorial Medical Association.—The autumnal session of the ninth year of this Society will be held at Oklahoma City, November 13.

The Fifth District Branch of the New York State Medical Association will hold a meeting at the Palatine Hotel, Newburg, at 2 p. m., November 20, to which the members of the Association and the profession generally are invited.

Union District Medical Association of Indiana and Ohio.—At the annual meeting of this Association held in Connersville, Ind., October 24, the following officers were elected: Dr. Samuel C. Thomas, Rushville, Ind., president, and Dr. Everett R. Beard, Liberty, Ind., secretary and treasurer. The next place of meeting is Liberty, Ind.

Military Tract (Ill.) Medical Society.—The annual meeting of this Society was held in Macomb, October 24 and 25. The following officers were elected: Dr. Robert A. Kerr, Peoria, president; Drs. George E. Luster, Galesburg, and James E. Coleman, Canton, vice-presidents, and Dr. Charles B. Horrell, Galesburg, secretary and treasurer.

Central Illinois District Medical Association.—The twenty-seventh semi-annual meeting of this Association convened at Pana, October 29. The following officers were elected: President, Dr. T. L. Catherwood, Shelbyville; vice-presidents, Drs. E. J. Brown, Decatur, and George W. Fringer, Pana; treasurer, J. H. Miller, Pana; and secretary, C. R. Spicer, Taylorville. The next meeting will be held in Pana.

Medical Society of the Woman's Medical College (Baltimore).—The annual meeting of this Society was held, October 22, and the following were elected officers: Dr. W. Milton Lewis, president; Dr. Louise Erich, vice-president; Mary Cook, recording secretary; Henrietta M. Thomas, corresponding secretary; Jennie Browne, treasurer. The annual address was delivered by Dr. E. F. Cordell on "The Hartford Medical Society, 1797-8."

NEW YORK STATE MEDICAL ASSOCIATION.

Eighteenth Annual Meeting, held in New York City, Oct. 21-24.

The President, Dr. John A. Wyeth, in the Chair.

FIRST DAY, MONDAY.

At the meeting of the Council and Fellows on the first day, routine business was transacted, and the following officers elected: Dr. Alvin A. Hubbell, Buffalo, president; Dr. W. H. Biggam, Brooklyn, vice-president; Dr. Guy D. Lombard, New York, secretary; Dr. E. H. Squibb, Brooklyn, treasurer; Dr. Irving S. Haynes, New York, chairman of the Committee on Arrangements; Dr. E. Eliot Harris, New York, chairman of Committee on Legislation; Dr. J. W. S. Gouley, New York, chairman of Committee on Library; Dr. Alexander Lambert, chairman of Committee on Public Health and Medical Charities; Dr. J. Riddle Goffe, chairman of Committee on Publication; Dr. C. E. Quimby, New York, chairman of Committee on Nominations.

SECOND DAY, TUESDAY.

Correction of Deformities Following Osteitis of the Knee.

DR. WISNER R. TOWNSEND, New York, said that the application of force under anesthesia would correct most cases. Excision had been largely superseded by osteotomy, but a cuneiform osteotomy was only indicated in cases of marked deformity.

Appendiceal Fistula.

DR. JOHN B. DEAVER, Philadelphia, read this paper, and pointed out that such fistulæ constituted a preventable sequel to appendicitis operations, and that prevention was to be brought about by always operating on appendicitis at an early stage. Where the discharge consisted almost entirely of mucus it pointed to the appendix having been left behind and being connected with the fistula. Fecal fistulæ of the large bowel were more apt to heal spontaneously than those of the small bowel. For simple non-fecal fistulæ, a search should be made for the foreign body, all drainage should be removed and washing out of the fistula discontinued. Where a section was required, as was often the case in fistula of the small bowel, he preferred to do an end-to-end anastomosis by intestinal suture.

DR. DE LANCEY ROCHESTER, Buffalo, stated it to be his present belief that operation should be done in every case of appendicitis so soon as consent could be obtained.

DR. FREDERICK HOLME WIGGIN, New York, counseled greater thoroughness in operating, making it a point to systematically remove all the diseased tissue. Too often the appendix was left behind. It was well that the author had cautioned against a very common though senseless practice, i. e., persistent irrigation of these fistulæ. Many cases of fistula had been indefinitely prolonged by this thoughtless practice.

DR. E. D. FERGUSON, Troy, cited some cases in support of the position he took, that prompt operation should be the rule.

DR. GIBBON, Scranton, Pa., took a still more advanced position, and declared that the proper time to operate was before there had been any appendicitis.

DR. S. BUSBY ALLEN, New York endeavored to chill the rising enthusiasm of the surgeons present by the statement that about as many persons recover under the medical as under the surgical treatment.

DR. PARKER SYMS, New York, said that even admitting for the sake of argument that 80 per cent. recover under the medical treatment of appendicitis, this was nothing to be proud of, in view of the fact that, at the present day, the mortality attending early operations for appendicitis is almost *nil*. For the existing prejudice against operating in appendicitis medical men rather than the laity were responsible.

DR. J. R. STURTEVANT, Theresa, said that as a country doctor he wished to cast his vote for the early surgical treatment of this disorder.

DR. ALLEN A. JONES, Buffalo, also spoke of the advantages of operating, either immediately or in the interval between attacks.

DR. JOHN EDWARDS, Gloversville, seeing that the surgeons were having things too much their own way, put in a plea for what he called "the calomel treatment" of appendicitis. This consists in the administration of small doses of calomel throughout the attack, together with the avoidance of morphin.

DR. C. B. TEFFT, Utica, said that as the cause of appendicitis was to be found in the appendix, and thorough treatment demands the removal of the cause of a disease, he could not escape from the conviction that the successful treatment of appendicitis must be surgical. Any of the alleged cures under medical treatment had been temporarily relieved; they had not been permanently cured.

DR. ALFRED T. LIVINGSTON, Jamestown, spoke of the great harm done by the use of morphin, and pointed out that, unlike a proper remedy, it baffles instead of assisting Nature.

The Electrophone as an Aid to Deafness.

DR. SAMUEL G. TRACY, New York, exhibited this instrument, which he had devised. It consists essentially in a combination of the microphone and telephone, and is intended as a convenient and useful substitute for the ear trumpet and the conversation tube. It would prove useful in about 80 per cent. of cases of chronic catarrhal deafness, and in a few other forms of deafness.

Symposium on Malignant Growths.

DR. ALBERT E. WOEHNERT, Buffalo, read a paper on "The Clinical Course of Cancers, with Reference to Their Resemblance to Inflammatory and Infectious Processes." He spoke of the part played by environment, and pointed out that metastasis often occurs early. The more rapid the growth the greater the leucocytosis, and the greater the toxemia.

DR. GEORGE BLUMER, Albany, "The Present Status of the Infectious Theory of Malignant Neoplasms," described the so-called cancer parasite, and the many interesting experiments made in this field, together with the claims made by well-known investigators, but held that no one had yet been able to successfully cultivate an organism from malignant growths. The tumors that had been said to result from certain inoculation experiments were not true tumors at all, but only granulomata. There were many facts, he said, suggestive of the infectious origin of malignant neoplasms, but such origin was far from having been proved.

DR. ALEXANDER LAMBERT, New York, in a paper on "Intrathoracic Growths," said that intrathoracic growths are usually malignant. Malignant growths of the pleura are usually secondary, and give rise to a hemorrhagic pleuritic exudate. Carcinoma of the lung is more commonly primary, and is seven times more frequent than sarcoma. The symptoms are dyspnea and pain, often accompanied by currant-juice sputum. Expectoration and fever are less than in pulmonary tuberculosis. Sarcoma is more frequent than carcinoma in the mediastinum. They are often associated with a peculiar paroxysmal cough, which is almost pathognomonic.

DR. JAMES EWING, New York, considered "The Estimation of the Malignancy of Tumors with Reference to the Reported Cures of the Disease," and directed attention to the necessity, in reporting cases of cancer, to sharply distinguish between the different varieties. It was now well known that certain forms of cancer are almost certain to return regardless of the radical nature of the operation. Cancers having their origin in the skin of the breast are decidedly less malignant than other forms of cancer of the breast. It was best to base a prognosis on the age and rapidity of growth of a given tumor. Adenocarcinomata are often radically cured by the surgeon's knife. Malignant tumors springing from the lining cells of the lacteal ducts are apt to be very insidious in their course, and are rather slow of growth. True carcinomata are most malignant when occurring during lactation.

DR. ANDREW R. ROBINSON, New York, in a paper on "The Treatment of Carcinomatous Growths by Caustics," spoke of cutaneous epitheliomata. After speaking of the necessity for destroying all the cancer cells lest the partial removal serve only to increase the rapidity of growth, the author described the action of some of the caustics that had been used for the destruction of cancer, notably chlorid of zinc, caustic potash

and arsenious acid. He preferred the last because of its attacking pathological in preference to normal tissue. This agent was particularly well suited to the treatment of cancers of the face, as it causes less disfigurement than the knife, and is less apt to be followed by a recurrence.

Dr. Joseph S. Gibb, Philadelphia, presented a paper on "Malignant Disease of the Nose and Accessory Cavities." He said that sarcoma of the nares was more common among males and that no period of life was exempt. Carcinoma, unlike sarcoma, spreads quite rapidly into the sinuses, and pain is an early and characteristic symptom. Surgeons were disinclined to operate on carcinoma of the nose.

Dr. James P. Tuttle, New York, discussed the topic of "Cancer of the Large Intestine." He said that next to the rectum the cecum was the most frequent site for malignant disease in the large bowel. The principal methods of treatment were three, viz., 1, excision; 2, enterostomy, and 3, entero-anastomosis. The first method gave the greatest prolongation of life, being about two years, while for enterostomy the period was nine or ten months, and for entero-anastomosis seven or eight months. The last gave the lowest immediate mortality.

Dr. Henry H. Morton, Brooklyn, described in a paper on "Malignant Disease of the Penis," the symptoms and the technique of the two operations commonly done for this condition.

Dr. S. Sherwell, Brooklyn, speaking of the use of caustics, said that he preferred to use the acid nitrate of mercury, applying it after curetting and cocainization. It should be neutralized with bicarbonate of soda after about twenty minutes.

Dr. Stephen Smith, New York, spoke of a very favorable experience he had had with cancers treated by the application of anhydrous sulphate of zinc.

Dr. John A. Bodine, New York, advocated the use of arsenious acid, applied preferably in the form of a paste composed of two parts of this acid and one part each of orthoform and gum acacia.

The Daily Medical Inspection of Schools.

Dr. Frederic W. Loughran, New York, spoke of the advantages of such inspection, and described the method employed by the health department of New York City.

Dr. James Lee, New York, said that this most excellent work should be broadened until it included the investigation of the sanitary condition of school buildings, the state of the special senses, and the fitting of the school work to the health and strength of the individual pupil.

Ethyl Bromid and Ethyl Chlorid Respectively as Surgical Anesthetics.

Dr. S. Ormond Goldan, New York, presented this communication. He said that these agents were not, in his opinion, superior to nitrous oxid, and their use as a preliminary to chloroform was unnecessary and dangerous. They should not be given except with the patient recumbent.

Dr. James P. Tuttle, New York, said that ethyl chlorid had been administered in New York City about two thousand times for anesthesia, without a single death or serious symptoms. It was best given on the old chloroform inhaler. It was especially adapted for use with alcoholic subjects.

Dr. Lucius W. Hotchkiss, New York, reported a case of "Perforation of Gastric Ulcer, with Report of a Case," in which he had operated successfully sixty hours after the occurrence of the perforation.

Dr. Frank W. Dennis, Unionville, in a paper on "The Therapeutic Value of Alcohol as Understood at the Beginning of the Twentieth Century," presented a mass of carefully selected statistics, all tending to show the evil effect of alcohol, and emphasizing the physician's responsibility when prescribing this agent.

Dr. A. Brothers, New York, read only a portion of his paper on "Pelvic Inflammation in the Female; Its Diagnosis and Management by the General Practitioner." He emphasized the importance of making the presence of pus the dividing line between medical and surgical treatment.

Dr. Grover W. Wende, Buffalo, under the caption of "Skin Diseases of Special Interest," presented an interesting series of photographs illustrating prominent cutaneous affections.

(To be continued.)

SAN FRANCISCO COUNTY MEDICAL SOCIETY.

Regular Meeting, held Oct. 8, 1901.

Dr. George H. Evans, in the Chair.

Present State of the Bottini Operation, with Special Reference to Personal Experience.

Dr. M. Kretoszyner thought the best time to operate was in the first stage of prostatism where distressing symptoms of frequent urination were setting in, and where cystoscopic examination demonstrated the beginning trabecular bladder. Whenever under such conditions we had to leave our patient to self-catheterization, where the slightest error in asepsis would expose him to all the dangers of an ascending urinary infection, then and there was the time for the Bottini. Here, with strict asepsis, we could perform the operation without any particular danger to, and with the greatest benefit for the future of the patient. Careful preparation, however, was always necessary, during which time local and internal treatment should be carried out, and careful local examinations made. He considered cystoscopy a necessary preliminary procedure without which we should only operate in exceptional cases. Whenever cystoscopy could not be successfully performed, and we were placed before the alternative of operating in the dark, he would then prefer to open the bladder from above.

The technic was considered in detail and the necessity of careful after-treatment urged. He had operated upon 26 patients with 3 deaths. One died from general sepsis; the second, ten days after operation, the postmortem examination demonstrating a far advanced interstitial nephritis; and the third died three days after the operation with acute uremic symptoms. Eleven of his patients had regained normal urinary functions. Six had materially improved; their general health and bladder function had been very much benefited by the operation, but they still had a residual urine of from 4 to 8 ounces and they still had to use a catheter once or twice daily. In 4 patients he could see no perceptible improvement, although they were operated on and treated with the same care as the successful cases. The two remaining cases were young men suffering from purulent prostatitis after gonorrhea. In both cases he made three incisions with the result that no more pus could be pressed out of the gland and all distressful symptoms had disappeared in both of these cases, however, almost complete incontinence followed the operation, which, in one case (three months after the operation) had partially improved. While refraining from formulating conclusions as to the real merits of the operation, he thought that it had come to stay and that the terrible suffering of old men from this condition would be effectually lessened by the procedure.

Perineal Prostatectomy.

Dr. George Goodfellow read a paper in which he described the technic which he thought was original as follows: The patient is placed upon his back with the thighs flexed on the abdomen (an exaggerated Simon position), a median incision is made, the membranous urethra and bladder entered. The finger is then introduced, pressure above the pubic bones made with the other hand, which permits the viscus to be drawn as far as desired toward the external opening. The enucleation is then made easy, and can be done very rapidly, the resulting hemorrhage amounting to almost nothing. After-treatment is simple, consisting of daily irrigation of the bladder with passage of good-sized sounds for ten days to two weeks in cases where the condition of the bladder demands such action. In uncomplicated cases, within forty-eight hours a part of the urine will be passed per urethram, and no further treatment is called for other than the introduction of sounds until all danger of contraction is over. It will be seen that

the operation just described is precisely what it purports to be: prostatectomy through a perineal incision; and, from the results, well worthy further trial. The author claimed that by means of this position and this method, with bi-manual manipulation, the neck of the bladder could be brought to the perineum without trouble, and the entire interior of the bladder as thoroughly explored with the finger as the interior of the uterus under similar circumstances.

Palliative Treatment of Chronic Prostatic Hypertrophy.

DR. JOHN C. SPENCER read a paper on this subject which he divided into general, medicinal and mechanical. Under the head of general treatment he included all that pertains to a maintenance of the best possible physical condition of the patient. Drugs, he thought, were only useful as placebos. Under the head of mechanical treatment there were comparatively few resources of a strictly non-operative nature at our command. Those cases where the amount of residual urine was small, the bladder being clean, required no treatment whatever; those suffering from occasional ischuria, with larger amounts of residual urine, must be catheterized from one to four or five times daily. He thought it might be possible to effect a slight reduction in the size of the gland by judicious massage, particularly in these cases where there is a catarrhal condition in the ducts and acini of the gland added to the hypertrophy; another procedure which sometimes gave relief to ischuria, was judicious dilation of the vesicle neck. He thought it was only by the most painstaking attention to these and many other details, individual to each case, that we might be able to make life tolerable to such sufferers as were denied relief through some radical operation.

PROFESSOR VINCENZ CZERNY of Heidelberg, who was the guest of the Society that evening, opened the discussion on these papers. He said that it was difficult for him to open the discussion on this valuable subject, but was very thankful it had been possible for him to note the experience of his colleagues here in the Society. He thought the subject was a large one, as it was treated to-day. The conservative treatment of the prostatic enlargement in the first place would be necessary, much as he had been fond of the radical course of extirpation. He had made several extirpations this year, the first of these was interesting as it was a subject 60 years of age, on whom he had made the suprapubic incision and extirpation of the projecting part of the gland on three different occasions; he had always come back as the enlargement returned. The first specimen of this extirpation was cancerous, he thought, but the examination showed it to be adenoid tissue; he finally extirpated by a semilunar incision in the perineum, in the same position described in Dr. Goodfellow's paper. A catheter was left in ten or twelve days and in five or six weeks he could urinate every two or three hours and only a very few drops of urine came through the fistula. The extirpation of cancer was a much more dangerous procedure because it was necessary to take out the capsule. The technic was much more difficult and the hemorrhage was great. He thought the Bottini was indicated where a valvular projection of the gland existed obstructing urination. It was not always easy to make the diagnosis and the cystoscope was not easy to use.

DR. G. CHISMORE said that the results of his observations with some experience in the treatment of the trouble which ensued had led him to be conservative in prostatic surgery; that conservative opinion had been of late much disturbed by the successful results obtained by Dr. Goodfellow as set forth to-night. He thought the liability to infection was less in the perineal than the suprapubic route. He thought the method of operating would be improved somewhat in technic, and we would eventually say to a man coming to us with senile hypertrophy: "Sir, have your prostate removed and you will be well." He had seen one or two good results from the combined suprapubic and perineal operation, but no case as yet with a perfectly satisfactory result from that procedure.

DR. R. L. RIGDON said he was sure all had been much pleased to listen to the papers and have the pleasure of the discussion given by Prof. Czerny and Dr. Chismore. It was evident that the operation on the prostate must go through the same evolution as the operations on the other parts of the body before we arrived at a conclusion at all definite and accepted by everyone. First, with Dr. Goodfellow's paper, he was much interested in the statement that the Doctor had no difficulty with a finger three inches long to enucleate the whole prostate if necessary. He had been through the perineum a number of times, for one reason or another, and found that it was difficult to reach the bladder, and in a case on which he made an autopsy, but which was not operated on for prostatic hypertrophy, but in which there was prostatic trouble, he was quite sure it would have been impossible for him to enucleate it even if he had pressed down on the pubes. He was glad that Dr. Goodfellow had such excellent results, but the method of operating should be tried further. With this operation he thought we would come across cases in which it would be impossible to reach the growth. He was satisfied that the perineal route was better than the suprapubic because of improved facilities for drainage. In regard to the Bottini operation, he had been skeptical about it and only recently had been lead to look with some favor on the operation judging from the results published. He had noticed in the paper read to-night by Dr. Krotszyner that the Doctor operated on 26 cases, 3 cases died and 2 had a fistula, therefore we have a bad result in about 20 per cent. of cases; still, Bottini's operation presented some favorable features, but we must confess it was not an ideal operation. He believed the conservative treatment in many of these patients would give better results than the radical work.

DR. E. E. KELLY said he had seen one of these operations of Dr. Goodfellow and it was well to emphasize two or three points that would overcome the objection raised by Dr. Rigdon. First, the position of relaxing all the abdominal muscles, and he was certain from the case he saw he could easily have brought the neck of the bladder to the surface and explored. Another thing was the celerity with which it was done, not more than five minutes of actual work and this was of great importance in elderly men where an anesthetic was an element of danger. Another thing in regard to the operation was that it was free from hemorrhage. The hemorrhage was exceptionally small and he believed that the Doctor stated that he never had to apply a ligature to check the hemorrhage. He was certain it would supersede the Bottini and it could be undertaken at an early period.

Case of Prostatic Calculus Removed Through a Perineal Incision.

DR. C. G. LEVISON said the patient was 35 years of age, gave a history of cystitis of gonorrheal origin, of 7 years' standing, during which time he had consulted a number of physicians. He complained of great perineal pain, vesical tenesmus, and frequent micturition, pain in the back, etc. The urine contained quantities of pus; chemical examination revealed traces of albumin due to pus; no serum albumin. Microscopic examination revealed quantities of pus and epithelial cells. Neither blood nor tubercle bacilli could be demonstrated. Harris' segregator collected clear urine from both ureters. In consequence of these examinations it was felt that the pus was of vesical origin. The cystoscope revealed a picture such as is usually seen in the hypertrophy of the aged. Metallic sounds introduced into the urethra did not come in contact with a stone, excluding the adventitious calculus. Rectal examination revealed an enlarged prostate, with indurated lobes. The right lobe was found to be the size of a pigeon's egg. Palpation revealed a middle lobe, with a smooth surface, producing the impression as if a stone lay embedded in the prostatic substance. Repeated examination made the diagnosis more probable. Firm pressure upon this part of the gland caused less uneasiness than when a normal prostate is manipulated. The patient himself could recognize when the finger passed over this indurated region. Massage of the prostate expressed less secretion than normal. Diagnosis of concretion of the middle lobe of the prostate with hypertrophy of the lateral lobes of inflammatory origin, was

made, and removal of the stone was advised, for it was felt that the stone was an active factor in the causation of the perineal pain and tenesmus. The operation was carried out as follows: With the patient in the exaggerated lithotomy position and the bladder filled, a horse-shoe incision 1.5 cm. anterior to the anus was made, and the rectum separated from the bladder, by blunt dissection. Hemorrhage was slight and easily controlled. An incision into the middle lobe exposed a concretion the size of a hazel-nut, which was shelled out. As part of the concretion had infiltrated the surrounding gland substance, this part together with the tissues was removed. The prostate was here dissected from the urethra without difficulty. As the prostate was incised on both sides of the concretion to effect its removal, but slight hemorrhage occurred. The wound was closed, with gauze drainage. Convalescence was practically unimpeded. The pain and vesical tenesmus had disappeared since the operation, confirming the supposition that the stone was the causative factor of the bladder symptoms. Microscopic examination of the prostatic tissue revealed an increase of the interstitial tissue together with an atrophy of the glandular structure. It was infiltrated with microscopic concrements. Chemical examination of the concrement unfortunately was not made.

NEW YORK OBSTETRICAL SOCIETY.

Stated Meeting, held October 8, 1901.

Dr. H. J. Boldt, in the Chair.

Dr. Egbert H. Grandin presented a specimen of "Tubal Gestation."

Multilocular Cysts of the Kidney.

Dr. G. G. Ward presented this specimen and gave a complete history of the case. Multilocular cyst of the kidney is a rare disease. It is almost always bilateral. Dickinson found only 1 case in 26 in which it was unilateral; Richie, 2 in 88; Lejars, 1 in 62, while Henry Morris found 4 in 7 cases. The average age was 45 years. It was considered hereditary by some authorities, but not by others. Bar reports 3 cases in one family, and Carl Beck found a similar instance. Henry Morris operated upon 5 cases (nephrectomy) and 2 were well seven years and three years after; this would apparently justify nephrectomy in those cases where the other kidney was found to be normal by palpation or inspection through the incision.

Placenta Duplex, or Biloba.

Dr. George L. Brodhead presented this specimen because of its great interest and rarity, and also because of the fact that what may be termed the supplementary placenta measuring from 15x9.5 cm. was of about the same size as the main placenta, which measured 14.5x11 cm., to the center of which the cord was attached. There was a space of about 5 cm. between the two placental masses which were connected by chorion and three fetal vessels, one of which was of large size. The fetus depended as much upon one placenta as upon the other. The one point of clinical importance to be remembered in connection with a specimen of this nature was that the supplementary portion (placenta succenturiata) may remain in the uterus and give rise to trouble; hence, the necessity of a careful inspection of the placenta immediately after its expulsion.

Mammary Changes of Menstruation.

Dr. J. Clifton Edgar presented to the Society an oil reproduction from Nature of the mammary changes produced incident to the menstrual epoch. The painting was not a selected one, but was taken from a number of cases seen during the past ten years in 600 consecutive examinations for evidences of rape. Both in medicolegal cases and in the diagnosis of pregnancy in private practice had he been impressed with the analogy between the changes in the nipple, primary areola, veins and Montgomery's tubercles in the menstruating and pregnant condition, the latter being limited to the first three months. He drew attention to the prominent veins, the darkening and edema of the areola, the erection and congested nipple, and the fact that a slight serous discharge, yellowish in color, caused dry scales to form in the orifices of the milk ducts. His observations lead him to conclude that the condition, especially among the upper classes in nulliparous women, was rather the rule than the exception, and also that very often the mammary changes of the first third of gestation can not be distinguished from those occurring in the premenstrual period of gestation; that, in fact, the mammary changes of early gestation are valueless even for an uncertain diagnosis of pregnancy.

Dr. Charles Jewett had been accustomed to attach some diagnostic importance to the mammary changes in first pregnancies in the absence of pelvic disease, and the fact that mammary changes counterfeiting pregnancy were present at the outset of menstruation did not wholly destroy the value of these signs as evidences of pregnancy. Approaching menstruation, as well as pelvic disease, must be excluded, and the other early signs, nausea and a skipped period, etc., must be considered. The question raised by Dr. Edgar recalled a case seen by him within a week or two. The subject had been exhibited as a pseudo-hermaphrodite. It was rather one of arrested development of the genitals in a male. The penis was very small and there were rudimentary testicles in the scrotum. There was no vagina, no external organs of generation, nor ovaries. The man, who was about six feet tall, was beardless; his breasts were large and as pendulous as those of a woman who had borne children; the areolæ were pigmented. The abdomen was pendulous and was marked with lineæ albicantes, which extended down over the upper portion of the thighs.

Comparative Study of the Immediate Recovery of Patients Following Vaginal and Total Abdominal and Supravaginal Hysterectomies—130 Cases.

Dr. LeRoy Broun read this paper. It has frequently been said that statistics are of little value in determining the worth of any method of operating and, he believed, that there was much reason for such a widespread opinion, since too many factors enter into the make-up of such reports to render them of much service to the operator seeking the best methods. A small percentage of deaths simply shows either the skill of the operator, or an unusual run of fortunate cases, or both. Three years ago he was an ardent advocate of the vaginal route of operating, believing that the after-recovery of the patient was smoother, and knowing that there are but few intra-pelvic growths that can not be removed by this route. During this time and for two years previous, this choice of route was adopted whenever it was possible to do so by Dr. Cleveland and himself at the Woman's Hospital. The results were excellent and apparently left nothing to be desired. During the two years past upon the same service this method had been unconsciously and gradually, to a large extent, replaced by the abdominal route, the object being to exercise as much conservatism as was possible. There were many staunch advocates of both methods of operating, but it was not his object to bring together such arguments but to compare the immediate recovery of patients following the performance of these classes of operations. With this end in view he brought together all the hysterectomies performed during the last two years on two of the services in the Woman's Hospital. These had been arranged under the respective heads of vaginal hysterectomies, complete abdominal hysterectomies, the cervix being removed, and supravaginal hysterectomies, the cervix being left.

Vaginal hysterectomies, 34 in number, were done after the following method: Hemostasis of the uterine arteries was obtained by the vasotribe or angiotribe. After complete separation of the uterus and the diseased adnexa, the broad ligaments were clamped off, one clamp on each side being used. Sterile gauze packing was loosely placed—well above the ends of the clamps—and lightly filling in the intervening space and the vagina. The clamps were removed at the end of twenty-four hours. The gauze packing was all removed by the seventh day, its removal being commenced on the fifth, unless there was some indication to the contrary, such as a rise in temperature, when its removal was commenced earlier.

Complete hysterectomies were 35 in number. The method here pursued was that adopted by the majority of operators. The uterine arteries were ligated with catgut. The ovarian arteries were obliterated in the majority of cases by the Skene electric clamps: when this was not used they were tied off with catgut. The peritoneum was not closed, the raw surfaces being simply covered with sterile gauze, the free end of which protruded from the vagina. This gauze was not disturbed until the fifth day unless there were indications. As in the vaginal hysterectomies it was all removed by the seventh day.

Supravaginal hysterectomies consisted of 54 operations; they were done in the manner customary with the majority of operators. The ovarian and uterine arteries were secured on both sides with catgut. The anterior and posterior flaps were united with running catgut Lembert sutures shutting off the stump of the cervix and leaving no raw surface exposed. The intervening dead space between the flaps was either drained for twenty-four hours by a small portion of gauze protruding the cervical canal into the vagina, or no drainage was used.

The above description of the technique used was given in order the better to compare intelligently the results obtained from this comparative study. A period of ten days from the time of operation was considered ample to determine the exact source of recovery of the patient; within this time any secondary infection that might arise would have usually shown itself. From the tabulated records of each class of operation a composite chart was made, both of the temperature and pulse. No fatal terminations were included in the comparison because it was his desire to determine if there was any difference in the smoothness of the recovery, as evinced by the temperature and pulse record. For the information of any desiring to know the death rate the following was given: 36 vaginal hysterectomies, 2 deaths (1 insanity, 1 sepsis); 36 complete hysterectomies (abdominal), 1 death (1 sepsis); 59 supravaginal hysterectomies, 5 deaths (4 sepsis, 1 pneumonia). A careful study of the composite charts reveals a remarkable similarity in the curve of recovery of both the temperature and pulse in each class of operation. There was shown to be a slight difference in favor of the vaginal route; this operation, however, is practically the same from a surgical standpoint as the complete abdominal hysterectomies with the absence of the abdominal incision and sutures. This slight difference he attributed to the presence of the sutures in the abdominal wall and not to any advantage of operating through the vagina. From the composite temperature and pulse curve there was only one conclusion to be drawn; that from this standpoint it is a matter of choice and individual preference with the surgeon, the patient making as even a normal recovery after one method of operating as from that following another. To further study the recovery after these operations he compared first the vaginal and complete abdominal hysterectomies as belonging to one class of what he called the open method, i. e., drainage through the vagina. Both have gauze drainage, which must be removed; one has, in addition, the abdominal wound, which is to the patient the most prominent feature of the operation. This wound, with its pain and frequent dressings, impairs the morale of the patient. Coming intimately in contact with the patients after these two classes of operations, the difference in their mental equilibrium impressed him strongly. After the gauze drainage was removed in both, the patient following the vaginal hysterectomy is thoroughly at ease, mentally and physically. The one following the abdominal hysterectomy has the wound in the abdomen uppermost in her mind and is anxious for some time. Of the two methods of operating he regarded that by the vagina the more difficult and to obtain the same results as by the abdomen required a larger and wider experience in operating. He referred, of course, to complicated cases of adherent diseased adnexa, and not to the simple removals of cancerous uteri. The abdominal route, with the assistance of a full view of the field of operation by the Trendelenburg position, and a complete isolation and cutting-off of the intestines by gauze pads, was, in his estimation, much the safer method. Here adhesions several under the eye and injuries to attached intestines can be more intelligently avoided. In performing these two classes of operations it was not their custom to close the pelvic peritoneum in either. The raw surfaces are covered loosely by sterile gauze packing, the free end of which extends into the vagina. It had never been their experience to find the adhesions between the plastic roof formed over the gauze and the intestines to give rise to any trouble, nor was he aware of any being reported by others.

Supravaginal hysterectomies: The above open methods involving as they do a necessary contracting granulating cavity, and attended with foul discharge, while safe, was still at variance with the refinement of surgery, where primary union is sought and the avoidance of open suppurating wounds is expected. The recovery of patients from this class of operation was surgical in every respect; there was no suppurating cavity to close by contraction and granulation. The method had the additional advantages of leaving the cervix which is said to be the seat of sexual feeling in women. The vault of the vagina is also kept intact and its elasticity maintained. He did not regard, however, the operation as materially shortened by leaving the cervix, for in total hysterectomy the extra time consumed in removing the cervix is largely compensated for by the rapidity with which the drain of sterile gauze covering the denuded surface is introduced, this covering consuming less time than the closing of the peritoneal flaps over the cervical stumps. A study of the composite temperature and pulse curves of the 54 cases of supravaginal hysterectomy showed a remarkable similarity in the recovery of patients from this class of operation as compared with the composite charts of those recovering from total abdominal and vaginal hysterectomies. In other words, while the method is more surgical, there is, however, no advantage gained in the ease of recovery so far as the temperature and pulse curve would indicate. Late ligature infection and the danger of septic absorption through the larger area of connective tissue exposed has been frequently urged against vaginal and total abdominal hysterectomies. This was not in accord with the experience at the Woman's Hospital. In those operations where it was considered safe to do so ligatures were replaced by the vasotribe, Skene's electric clamp or the ordinary clamp. When ligatures were used No. 2 size was employed. That there must be some absorption was evident, but in his experience it did not have an appreciable effect upon the temperature or pulse of the patient. A close study of the individual charts in both classes of operations bore out this statement: the open vault of the vagina precludes any retention of the secretions above. The true advantage of the supravaginal method was in the absence of any drain with its attendant painful removal, the absence of resulting suppurating cavity, and the time gained in the discharge of the patient from surgical care. The leaving of the cervix, while of distinct advantage, is accompanied by some risk, since, if secondary infection occurs through its canal the effusion under the flaps now made septic can not be reached except by a secondary operation. The dead space necessarily existing between the peritoneal flaps and the cervical stump had always been to him a source of concern. That the effusion here is usually taken care of by the patient is known to all and is shown by the even temperature curve of the 54 cases reported. That this satisfactory outcome was not always in accord with his personal experience was true. To avoid this secondary infection the habit of closing the cervical stump was customary although not universally adopted. The method of draining into the vagina by a small gauze wick protruding through the canal of the cervical stump, and which was removed at the end of twelve or twenty-four hours, he thought to be a questionable one, since it furnished a channel for infection of the sub-peritoneal space. For the same reason did he regard the leaving of the stump open as cut across liable to permit a secondary infection of the space above. The vagina, even if sterile at the time of operation, can not remain so with the bloody serum escaping over the vulva. The wonder was that when we

call Cohn's classical statement that "one germ under proper condition may give rise to more than half a million of similar organisms within twenty-four hours," that with the draining of the cervical stump into the vagina secondary infection under the peritoneal flaps is not the necessary sequence instead of being only the occasional occurrence. When such an infection does occur it is fortunately in most instances of a mild type and the confined pus is liberated by gentle stretching of the cervical stump.

The writer than detailed the cases that terminated fatally already referred to in the beginning of the paper. As a result he drew certain conclusions. It was noted that the percentage of mortality in the 36 cases of vaginal hysterectomy was 5.5, that of the 36 cases of complete hysterectomy was 2.75, while that of the 59 cases of supravaginal hysterectomy was 8.33. When it was recalled that the temperature and pulse record, as shown on the chart, of all cases recovering was practically the same in one class of operations as in the others; when it was further borne in mind that the vaginal and complete hysterectomies were with few exceptions performed on patients with purulent adnexa associated with dense adhesions, and in whom the possibilities of infection from the condition present were greatest, the difference in the mortality became more striking than the percentage death rate showed. The deduction from the data was in direct opposition to Dr. Nobles, who, in his finished article of four years ago on "Hysterectomy for Fibroma" from a collection of 345 cases of supravaginal amputations by five American operators, a death rate of 4.9 per cent. He (Dr. Noble) also quoted Olshausen's table of 806 vaginal hysterectomies with a death rate of 5.6 per cent., as opposed to 520 total hysterectomies with a death rate of 9.6 per cent. He thought that if the different techniques of the various operators were known some reason for this difference might be seen. The question of draining the sub-peritoneal space of supravaginal hysterectomies through a dilated cervix was one in which operators were not yet in thorough accord. The usual method of those who advocate drainage of this space was to insert through the dilated, or longitudinally divided cervical stump a gauze wick which was removed in 24 or 48 hours after the operation. That this drainage through the cervix was a bad practice he was personally convinced. All of the five deaths from supravaginal hysterectomy, with the possible exception of one, were caused by sepsis. Three of these cases could not have been septic from the pathological conditions present. Of the two remaining, one had in addition to the fibromyoma a pyosalpinx which was unruptured and had a retroverted uterus with pyosalpinx. Here there was no rupture in removal; even if ruptured there was every evidence from the history that the pus was sterile. In all the fatal cases the sub-peritoneal space was drained by the gauze wick through the cervix. There was no other conclusion but that through the drainage channel the infection traveled, and this was in keeping with the literature on the subject, chiefly that coming from the Johns Hopkins Hospital. Fortunately, in the large majority of instances in which drainage was carried out no infection occurred. Miller, in his bacteriological study of the cultures made from the interior of the uterus and of the pus from diseased ovaries and tubes, reports, in the Johns Hopkins Bulletin, the following results: In 44 cases of hysterectomy mostly for pelvic inflammatory disease the cultures from the interior of the uterus were all negative. In 51 cases of pyosalpinx, ovarian and pelvic abscess, the cultures were negative in all but one; in this the gonococci were found. During the past six months in all the cases of supravaginal hysterectomies it was the custom in their service to close the cervical stump with catgut sutures before uniting over it the anterior and posterior flaps of the peritoneum. Up to the present there had been no secondary infection.

A review of the various facts brought out in his study led Dr. Brown to the conclusion that: 1. While the finished result of a supravaginal hysterectomy was most satisfactory, the operation was, however, marred by the possibility of a secondary infection, at times terminating fatally. When this infection does occur it can be reached only by secondary operation. 2. The chances of this infection occurring are greater when the sub-peritoneal space is drained through the canal of the cervical stump, or when the canal is left open. There is every reason to close the stump as offering the best results. 3. Total abdominal hysterectomy, though not such a finished operation as the supravaginal, is, however. one in which there is less likelihood of any secondary complications, and though objectionable on account of the suppurating cavity to be closed by contraction and granulation, yet offers to the patient a surer means of uninterrupted recovery. This conclusion, while at variance with Olshausen's large collection of cases in which he gives a 5.6 per cent. death rate for supravaginal, and a 9.6 per cent. for total hysterectomies is, however, the only one to be drawn from the collection brought together.

Therapeutics.

Alcohol and Tobacco Habits.

A subscriber asks whether or not drunkenness and the tobacco habit can be cured at home, and the treatment for the same.

The liquor habit can certainly be better handled in some well regulated, reputable sanitarium for nervous diseases which is conducted and supervised by capable and experienced men.

The success of treatment at home depends a great deal upon the condition of the patient and his ability to exercise self-control over either of the habits. If this is impossible then, of course, compulsory measures must be taken. The treatment should consist of alteratives and tonics.

D. R. Brower, in an article on treatment of chronic alcoholism, recommends the following as an alterative:

℞.	Auri et sodii chloridi	gr. 1/10-1/8	006-0075
	Pulv. resinæ guaiaci	gr. ii	12

M. Ft. cap. No. i. Sig.: One such to be taken one hour before each meal.

As a tonic the following is recommended:

℞.	Tinct. nucis vom.	℥ii	8
	Tinct. capsici	℥iii	12
	Tinct. cinchonæ comp. q. s. ad	℥iii	96

M. Sig.: One dessertspoonful after each meal in water; or:

℞.	Tinct. nucis vom.	℥ss	16
	Tinct. capsici	℥i	32
	Ext. lupulini flu.	℥iii	96
	Inf. gent. comp.	℥iss	48

M. Sig.: One dessertspoonful three or four times a day.

Careful attention must be given to elimination by the skin, bowels and kidneys; the diet should be properly regulated. If anemia is present it should be corrected by the administration of iron in some form, and when there is general loss of strength and mental feebleness the following sometimes serves a good purpose:

℞.	Strychninæ sulphatis	gr. 2/3-i	04-06
	Syr. hypophos. q. s. ad	℥iii	96

M. Sig.: One teaspoonful three or four times a day.

Treatment of Dysentery.

Hughes, in *Med. Record*, recommends the following in the treatment of dysentery:

℞.	Acidi sulphurici dil.	℥ss	16
	Tinct. opii deod.		
	Spts. camphoræ, āā	℥i	32
	Tinct. capsici		
	Spts. chloroformi, āā	℥ss	16
	Spts. vini gallici	℥iss	48

M. Sig.: One teaspoonful every three hours if necessary; or:

℞.	Magnesii sulphatis	℥iss	48
	Acidi sulph. dil.		
	Tinct. opii deodor., aā	℥ii	8
	Aq. chloroformi q. s. ad	℥iii	96

M. Sig.: One dessertspoonful every four hours.

Treatment of Zona (Herpes Zoster).

The following formulæ to be employed in the treatment of herpes zoster is recommended by *New York Med. Jour.*:

℞. Acidi tannici
Bismuthi subnit., āā ..... ℥ss 2
Zinci oxidi
Amyli, āā ..... gr. lxxv 5
M. Sig.: To be applied locally.

Kaposi recommends the following, if powders seem to irritate:

℞. Ceræ flavæ ..... ℥iiss 10
Olei olivæ ..... ℥i 32
Ext. opii (aquosi) ..... gr. vi 36
M. Sig.: For local application.

Lestikow employs the following:

℞. Acidi boracici ..... gr. xl 2 66
Cocainæ hydrochlor. ..... gr. viiss 50
Vaselini ..... ℥vi 24
M. Sig.: Apply locally and cover with cotton or gauze.

Treatment of Pertussis.

T. J. Mays, in *Med. Record*, recommends the use of counter-irritants over the region of the pneumogastric in the neck, by applying strips of mustard plaster about two inches wide from the angle of the jaw to the clavicles on each side of the neck, two or three times a day until the effects of the mustard are evident. He states that amelioration of the spasmodic cough is the result. He sometimes uses the following locally instead of applying the mustard:

℞. Chloralis hydratis
Menthol
Pulv. camphoræ, āā ..... ℥ss 16
M. Sig.: Apply locally several times daily.

Painting the same area with tincture of iodin twice a day, until irritation of the skin is produced, is of benefit. In stubborn cases he injects silver nitrate over the vagi beneath the skin, using three to six minims of a 2/5 per cent. solution of the drug, preceded by an injection of a few drops of cocain solution.

Treatment of Hemorrhoids.

The following combination is recommended by Anderson in *Med. Record*:

℞. Hydrastin
Pulv. aluminis, āā ..... gr. xv 1
Cocainæ muriatis ..... gr. viiss 50
Ol. theobrom. q. s.
M. Ft. suppos. No. xii. Sig.: Insert one every night.

To Check the Diarrhea in Typhoid Fever.

℞. Acidi carbol.
Ext. opii, āā ..... gr. i 06
Bismuthi subnit. ..... gr. xviii 1 20
M. Ft. pil. No. vi. Sig.: One pill three times a day.

Method of Applying Hot Fomentations.

Below is given the proper method of applying hot fomentations to different parts of the body. While it may seem a simple thing to do, there are too many physicians who are unable to give specific directions to attendants in carrying out such procedures. The following methods are advised by the *Pacif. Health Jour.* The necessary articles are two or three pieces of flannel each one yard square, a pail of boiling water and a towel. First, get all the articles for treatment in readiness in a convenient place; have the water boiling hot. Then the patient is to be prepared by being put in a position so that the part to be fomented will be easily accessible, protected only by covering that can be readily thrown back. The feet should be kept warm. Next take one of the squares of flannel, or fomentation blankets, and spread out smoothly upon a convenient surface in readiness to receive the wet, hot blanket. Taking another fomentation blanket fold to suit the part to be treated. For instance, if the stomach or abdomen is the part to be treated, fold the blanket double three times, that is, so that it will be one yard long, one eighth yard wide, and eight thicknesses. Holding one end in each hand, dip the center up to within a few inches of each end into the boiling water, twist each end tightly in opposite directions, and pull, thus wringing the blanket until the water will not drip from it. Quickly unfolding the blanket to the required size, lay it upon the dry one in readiness; fold in the ends and fold the dry blanket over it, thus retaining the heat and rendering it bearable to the patient. Place it upon the parts and leave until comfortable, occasionally passing the hand under it to prevent burning. Then renew by using the third blanket for the wet one, allowing no lapse of time between the two fomentations. Repeat the process until the object is obtained, being careful that the patient is not left uncovered at any time during the treatment, as the hot moist surface will become readily chilled if exposed for any length of time.

Treatment of the Throat in Scarlet Fever.

The following is given by the *Med. Standard* as a local application to the throat in scarlet fever:

℞. Acidi carbol. ..... ℥ss 2
Glycerini
Aq. camphoræ, āā ..... ℥i 32
Potassii chloratis ..... gr. x 66
Aquæ q. s. ad. ..... ℥vi 192
M. Sig.: Use as a gargle or spray.

As a local application in the form of a spray or to be applied with a swab, hydrogen peroxid diluted with two or three parts of water is universally recommended.

As an antiseptic and for the itching of the skin the *Standard* recommends the following:

℞. Ichthyol ..... ℥v 20
Lani ..... ℥x 300
Olei olivæ ..... ℥i 32
M. Sig.: To be applied locally as an inunction.

Treatment of Sore Throat.

As stated in the *Dietetic and Hygienic Gaz.*, one of the best remedies for sore throat is a compress worn over the throat at night. A piece of muslin or light cloth about half the size of an ordinary handkerchief should be folded so as to cover a space of about three or four inches, wrung lightly out of cold water, and placed around the neck. This should be covered by a piece of rubber cloth, oil silk, or oiled muslin. A long, narrow strip of dry cloth should now be wrapped around the neck in such a way as to hold the compress firmly in place. If this compress is so put on as to retain its place, prevent evaporation, and exclude the air, it is an admirable remedy. It should be put on when retiring at night and taken off in the morning on arising, the neck being then washed off in cold water and rubbed until the skin glows.

Medicolegal.

Can Not Bind the State by Promise of Free Treatment.—On the second appeal of State Hospital vs. Fountain, an action against the guardian of an insane patient, the Supreme Court of North Carolina holds that the contention could not be sustained that the ward's estate was not liable for the expense of maintaining and treating her at the hospital because the guardian, upon his qualification as such, applied to the superintendent to know if any charge was made for patients who were able to pay, and was informed that no charge was made for any person, and thereupon his ward was allowed to remain in the hospital. The court says that the contention could not be sustained as it is too well settled that its agents or officers can not bind the state by any contract they may make, when not so authorized to do; especially in violation of the express statute (Section 2278 of the Code of 1883) which allows the admission into the institution of others than indigent insane person upon payment of proper compensation.

Right of Recovery for Operation.—The second appellate division of the Supreme Court of New York has affirmed the judgment of the trial term in the case of MacEvitt vs. Maass, which was reported on page 520 of THE JOURNAL of Feb. 23,

1901. As the appellate division restates the case, the physician who brought this action against a husband to recover for services rendered as physician and surgeon to his wife, after examination of the patient, told the husband that a surgical operation for an internal trouble was necessary, whereupon it was agreed between them that he would perform the operation for $75. The physician testified that a further examination, a few days later, revealed that the first diagnosis was erroneous; that the condition of his patient was more grave than first supposed; that the operation first suggested was not necessary, but that a different and more severe operation was required, which, unlike the former, jeopardized life; and that he told all these things to the husband, who consented to the operation then advised, but that nothing was said between them upon the subject of the fee. Under these circumstances, the court thinks that the question was properly submitted to the jury whether the physician superseded the original agreement based upon the first examination, and it holds that the verdict, which it states was for $275, should not be disturbed. And it is of the opinion that there was evidence sufficient upon which to base the verdict rendered, because there was proof in the record of an operation with the attendance of four physicians and six nurses; an operation severe in character, two and one-half hours in duration, which required the knife, and which was followed by many daily visits, covering a period of between two and three weeks. Then, two experts who attended upon the operation, and one of whom was present at the subsequent visits, were called, and placed a value on the services rendered, and the court holds that the plaintiff was not confined to a hypothetical questioning of such experts, for they were entitled to give their opinions upon what they knew of the services.

Medical Examiner and Statements as to Health.—Section 1812 of the Iowa Code provides that, where a life insurance company's medical examiner or physician acting as such under the rules and regulations of the company reports an applicant to be a fit subject for insurance, the company "shall be thereby estopped from setting up in defense of the action on said policy . . . that the assured was not in the condition of health required by the policy at the time of the issuance or delivery thereof, unless the same was procured through the fraud or deceit of the assured." Now, it is evident, the Supreme Court of Iowa says, in the case of Peterson vs. the Des Moines Life Association, that the medical examiner or physician contemplated in this section is the person who examines the applicant, and determines his condition of health, and reports whether he is a proper risk. It is no doubt customary for life insurance companies to have a general medical advisor or director at the home office, whose advice is taken into account in determining whether the risk shall be accepted; but the person who makes the actual examination, and reports on the applicant's condition, is evidently contemplated by the statute as the medical examiner or physician referred to. Then, it says that it is to be noticed that the estoppel declared by the statute is as to the condition of the health of the assured at the time the policy was issued. There may, no doubt, be warranties as to other matters not relating to the health of the assured—such as his place of residence or occupation—breach of which will avoid the policy notwithstanding the statute; but, so far as the statements relied on as warranties relate to the health of the assured and his acceptability as a risk on that account, the company is estopped from showing their falsity, unless they constitute fraud or deceit in procuring the report or certificate of the medical examiner. Nor does the court agree with the contention advanced that the estoppel applies only to the condition of health of the assured at the time the policy is issued, and that statements as to previous disease, treatment by physician, accidents, etc., are warranties any breach of which will avoid the policy. In other words, it thinks that the estoppel relates to all matters inquired about so far as they bear on the health and physical condition of the applicant as affecting the risk, whether they refer to the time the policy is issued or to some previous time; for the ultimate question is whether the applicant is a suitable person to accept as subject of life insurance. Moreover, it says that the tendency of the courts, without the aid of legislation, has been to construe statements as to previous accidents and diseases into mere assertions on the part of the applicant as to what he knows of his personal knowledge, or may be presumed in good faith to know, instead of strict warranties regardless of personal knowledge.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

American Medicine (Philadelphia), October 26.

1 *Transmission of Tuberculosis Through Meat and Milk. John J. Repp.
2 *Symptoms, Diagnosis and Treatment of Enlarged Prostate Gland. Charles J. Whalen.
3 Report of a Case of Filaria Medinensis—Guinea-worm Disease. Edward Francis.
4 *Analgesia from the Spinal Subarachnoid Injection of Cocain. J. Garland Sherrill.
5 The Use of Ethyl Bromid as a Primary Anesthetic to Ether or Chloroform. Emery Marvel.
6 Chorea with Partial Paralysis Secondary to Rhinitis. C. Fontaine-Maury Leidy.
7 The Lane Lectures on the Social Aspects of Dermatology. Malcolm Morris.

Boston Medical and Surgical Journal, October 24.

8 The Case of President McKinley.
9 *Association of Anemia with Chronic Enlargement of the Spleen. (Continued.) Arthur H. Wentworth.
10 *A Brief Résumé of the Life and Work of Ambroise Paré. Charles G. Cumston.
11 *Tubercular Peritonitis. (Concluded.) Henri T. Fontaine.
12 The Report of a Unique Case of Chlorosis. Wm. Edgar Darnall.

Medical News (N. Y.), October 26.

13 *Giant Sacrococcygeal Tumors, an Account of One Which Pursued an Atrophic Course. Charles A. Powers.
14 Four Cases of Tumors. James E. Newcomb.
15 *Biopsy—The Histological Diagnosis of Dermatoses and Tumors of the Skin of Doubtful Character. Jean Darier.
16 Report of Two Interesting Cases of Appendicitis. William B. Young and William M. Johnson.
17 *The Physician in Relation to the Dispensing of Medicine. J. Tracy Melvin.
18 Anchylostoma Duodenale in Texas. M. Charlotte Schaefer.

New York Medical Journal, October 26.

19 Costume Deformities. E. H. Bradford.
20 *On Resistance Exercises in the Treatment of Deformities of the Feet and Ankles. E. Muirhead Little.
21 *The Lane Lectures on the Social Aspects of Dermatology. Malcolm Morris.
22 How Do You Treat Habitual Constipation? S. A. Knopf.
23 Importance of Drinking Freely of Water. B. C. Loveland.
24 Constipation in Children and in Adults. William S. Ackert.
25 The Value of Calomel and Sodium Phosphate Objections to Enemata. Wm. F. Barclay.

Medical Record (N. Y.), October 26.

26 The Prevention of Yellow Fever. Walter Reed and James Carroll.
27 *On the Mode of Transmission of the Infectious Agent in Yellow Fever and Its Bearing upon Quarantine Regulations. A. H. Doty.
28 Arterio-sclerosis: Importance, Definition, Etiology, and Symptomatology. Charles E. Nammack.
29 *Cinchonism, and Its Effect upon Articulation and Vocalization. Carl Seiler.

Philadelphia Medical Journal, October 26.

30 Political Assassinations. Charles K. Mills.
31 The Czolgosz Case. Edward C. Spitzka.
32 *Some Respiratory Conditions Dependent upon Gout and Obesity. J. M. Anders.
33 *Results and Advantages of Closing the Nephrorrhaphy Wound with Aseptic Adhesive Strips. Augustin H. Goelet.
34 *Multiple Primary Neoplasms in One Individual (Spindle-cell Sarcoma of Forearm, Adeno-carcinoma of Pylorus, Myomata of Stomach-wall). Treatment with Coley's Mixture. Aldred Scott Warthin.
35 Are the Smaller Medical Colleges an Essential Factor in Medical Education? William J. Gillette.

St. Louis Medical Review, October 26.

36 A Case of Stab Wound of the Liver. H. C. Dalton.
37 Gleanings During Eleven Years Devoted to the General Practice of Medicine. J. H. Herring.
38 Official Report of President McKinley's Case.

Cincinnati Lancet-Clinic, October 26.

39 Osteomyelitis. C. E. Caldwell.
40 *Dysentery. George J. Monroe.

The Medical Age (Detroit, Mich.), October 10.

41 *Treatment of Malarial Infection. Henry B. Favill.
42 Insanity as a Defense in Criminal Cases. B. D. Eastman.
43 The Trained Nurse in Obstetrical Cases. C. C. Mapes.

Medical Fortnightly (St. Louis), October.

44 Evolution in the Medical Profession. M. V. Ball.

Virginia Medical Semi-Monthly (Richmond), October 11.

45 The Present Status of Epileptics in Virginia. William F. Drewry.
46 Two Cases: 1, Transvaginal Band Obstructing Labor; 2, Prolapsed Ovary Simulating Direct Inguinal Hernia. E. T. Brady.
47 Clinical Examination of the Blood. L. H. Warner.
48 The Mosquito. Ennion G. Williams.
49 The Conservative Surgical Treatment of Appendicitis. W. E. Fitch.

Iowa Medical Journal (Des Moines), October 15.

50 The Surgery of Gastric Ulcer and Carcinoma. Van Buren Knott.
51 *What Constitutes a Good Common School Text-Book in Physiology. Clifton Scott.
52 *The Treatment of Internal Hemorrhoids Without General Anesthesia. Rufus D. Mason.
53 Treatment of Intestinal Obstructions Caused by Incarcerated Hernia. O. R. Wright.
54 Hysteria. J. W. Harrison.
55 Adenoids. B. C. Kelly.
56 Acute Obstruction of the Bowel to an Enterolith. C. H. Churchill.

Northwestern Lancet (Minneapolis), October 15.

57 Medical Aspect of Gastric Cancer. J. W. Bell.
58 Injuries of the Spinal Cord. James H. Dunn.
59 A Visit to the Hospitals of Paris. John H. Rishmiller.

American Practitioner and News (Louisville, Ky.), September 15.

60 *The Cure of Enuresis. Philip F. Barbour.
61 Diagnosis of Bright's disease. Andrew Sargent.
62 The Treatment of Bright's Disease. A. G. Blincoe.
63 Sarcoma of the Jaw. E. W. Samuel.
64 Immunity and Serumtherapy. Lyttleton B. Cook.
65 Strangulated Umbilical Hernia. William C. Dugan.
66 Syphilitic Ulceration. I. N. Bloom.
67 *Age of First Menstruation in United States. Geo. J. Engelman.

American Journal of Obstetrics (N. Y.), October.

68 Address, British Medical Association. John W. Byers.
69 *Scratch-marks on the Wax-tipped Catheter as a Means of Determining the Presence of Stone in the Kidney and in the Ureter. Howard A. Kelly.
70 *Three Cases of Cesarean Section, and a Consideration of the Indication for Craniotomy. Joseph B. DeLee.
71 Repeated Pregnancy in the Same Tube: A Case of Homotopic and Homositic Repeated Tubal Pregnancy. Frank A. Stahl.
72 Percentage Modification of Cow's Milk for Infant-Feeding. Edward Hamilton.
73 Two Cases of Brain Tumor in Gynecological Practice. Hunter Robb.
74 The Excessive Vomiting of Pregnancy. William M. Taylor.
75 *Toxicity of Urine in Pregnancy. Robert W. Stewart.
76 *On Prolonged Pregnancy; Report of a Case, and Compilation of Sixty-one Well-Authenticated Cases of This Kind. Fred. J. Taussig.
77 Torsion of a Hydrosalpinx Resulting in Infarction. William H. Weir.

Quarterly Journal of Inebriety (Hartford, Conn.), October.

78 Pharmacology and Therapeutics of Ethyl Alcohol; Is Alcohol a Stimulant or a Narcotic? A Review of More Recent Authorities. Winfield S. Hall.
79 *Some Obscure Injuries Following the Toxic Use of Alcohol. T. D. Crothers.
80 Arsenical Poisoning from Beer Drinking. T. N. Kelynack.
81 Alcoholism in Three Acts. Osgood Mason.
82 Cigarette Smoking. Dudley S. Reynolds.
83 The Alcohol Question as a Cultural and Race Problem. August Forel.
84 Inebriety: A Study of Its Causes, Duration, Prophylaxis and Management. Charles L. Dana.

Journal of the Association of Military Surgeons (Carlisle, Pa.), August.

85 The Status of the Military Surgeon. Alexander J. Stone.
86 A Plea for Immediate Celiotomy in Penetrating Gunshot Wounds of the Abdomen in War. Charles E. B. Flagg.
87 *Suprapubic Operation for Varicocele and Other Conditions Occurring Within the Scrotum Requiring Surgical Interference. Alfred E. Bradley.
88 Observations in China and the Tropics on the Army Ration and the Post Exchange or Canteen. Louis L. Seaman.
89 Three Noteworthy Cases of Brain Injury. George T. Vaughan.
90 Regimental Field Equipment, Model of 1901, for the Medical Department of the Regular Army. John Van Rensselaer Hoff.
91 The Pennsylvania Brigade Hospital Tent. Herbert A. Arnold.
92 Some Points in Military Surgical Practice. Jefferson D. Griffith.

Canada Lancet (Toronto), October.

93 Report of Cases Treated with Superheated Dry Air. W. H. Pepler.
94 Puerperal Insanity. Ernest Hall.
95 A Case of Opium Poisoning. F. W. Marlow.
96 Post-Typhoidal Ulceration and Abductor Paresis of the Larynx. D. J. Gibb Wishart.

Journal of Experimental Medicine (N. Y.), October.

97 Alloxuric Excretion in a Case of Leucopenia. Robert Hutchinson and J. J. R. McLeod.
98 Studies on the Morphology of Ganglion Cells in the Rabbit. Frederick R. Bailey.
99 *The Acid Intoxication of Diabetes in Its Relation to Prognosis. C. A. Herter.
100 *Notes upon the Agglutinations Obtained by Intraperitoneal Insertion of Celloidin Capsules Containing Bacilli and upon a Mode of Preparing Such Capsules. John McCrae.
101 *Some Experimental Data on the Significance of Concentration and of Multiplicity of Area in Hypodermic Injections. S. J. Meltzer.
102 *Observations on a Case of Cyclic Albuminuria. LaFayette B. Mendel and Donald R. Hooker.

Western Medical Review (Lincoln, Neb.), October 15.

103 Nebraska's Medical Pioneers. T. P. Livingston, and H. Winnett Orr.
104 A Plea for Greater Care in the Treatment of Cases of Ophthalmia Neonatorum. D. C. Bryant.
105 Follicular Conjunctivitis. J. W. Bullard.
106 Neurasthenia. Jay G. Roberts.
107 The Treatment of Pneumonia in Children. Georgina Grotham.
108 The Drug Habit: Its Cause and Restriction. Joseph M. Aiken.
109 Intestinal Suture, All Knots Inside. F. Gregory Connell.
110 *The Prevention of Insanity. Henry Waldo Coe.

Interstate Medical Journal (St. Louis), October.

111 *A New Chloroform-Oxygen Anesthesia. Heinz Wohlgemuth.
112 A Critical Review of Some Recent Literature on the Pathology of Tabes Dorsalis. Sidney I. Schwab.
113 *Some Obscure Injuries Following the Toxic Use of Alcohol. T. D. Crothers.

University of Pennsylvania Medical Bulletin (Philadelphia), October.

114 Early Infantile Inguinal Hernia of the Vermiform Appendix. George A. Piersol.
115 *The Conservation or Preservation of the Ovaries and Functionating Uterine Tissue in the Operation of Hystero-myomectomy. Henry D. Beyea.
116 A Review of Some Recent Literature on the Etiology of Carcinoma. Aloysius O. J. Kelly.
117 Appendicitis in Children of Two Years and Under. J. P. Crozer Griffith.
118 A Series of Twelve Articles on Medical Men Prominent in the Civil and Military Affairs of Revolutionary Times. Francis R. Packard.

Kansas City Medical Record, October.

119 Gunshot Wounds of the Abdomen. E. F. Robinson.

New York State Journal of Medicine (N. Y.), October.

120 The Pathology, Diagnosis, Special Prophylaxis and Treatment of Tuberculosis of the Female Pelvic Organs. John G. Clark.
121 *The Operative Treatment of Symblepharon by the Use of Thiersch Grafts. Wilbur B. Marple.
122 The Pathology, Diagnosis, Special Prophylaxis and Treatment of Tuberculosis of the Skin. John A. Fordyce.
123 Report of Three Cases of Intestinal Obstruction Due to Meckel's Diverticulum. John F. Erdmann.
124 *Quackery: Several of Its Dangers and Remedies for Same. Francis E. Fronczak.
125 *The Major Obstetric Operations from the Standpoint of the General Practitioner. Edward Reynolds.
126 *The Racial Factor in Hysteria. Julius Ullman.
127 Intraspinal Cocainization for Surgical Anesthesia. S. Ormand Goldan.

Medical and Surgical Monitor (Indianapolis), October 15.

128 Impressions of German Surgical Clinics. J. Rilus Eastman.
129 Medicine as a Profession—Facts, Fallacies and Fancies About It. Walker Schell.

Medical Sentinel (Portland, Ore.), October.

130 The Sociologic Problems of Medicine with Sidelights. H. A. Castle.
131 Report of a Case of Tetany. Alexander Hunter.

Medical Herald (St. Joseph, Mo.), October.

132 *[illegible] of the Complications Which May Follow the Injection Treatment for Hernia. N. M. Baskett.
133 A Review on Intubation of the Larynx. Hal Foster.
134 A Case of Sporadic Cretinism. Emma W. Demaree.
135 The Epidemic of So-called "Smallpox." J. D. Brummall.

Pacific Medical Journal (San Francisco), October.

136 The Need of Broader Views Concerning the Study of Inebriety. (Continued.) P. C. Remindino.
137 Puerperal Insanity. Ernest Hall.
138 The Etiology, Physiology, Pathology, Symptomatology and Treatment of Crime. George I. Bluhm.

Hot Springs Medical Journal, October.

139 Sacculated Aneurysm of the Arch of the Aorta. Henry A. Robbins.
140 *Movable Liver—Hepatopexy. J. H. Carstens.

The Ophthalmic Record (Chicago), October.

141 Case of Foreign Body Lodged Within the Eyeball and Removed Eighteen Years After the Injury; Sympathetic Inflammation Three Times Without Loss of Vision. Alvin A. Hubbell.
142 A Case of Hysteric Blindness and Deafness. H. V. Wuerdemann.
143 *Three Mechanical Rules for the Ready Detection of the Paretic Muscle in Single Ocular Paralysis. M. F. Weymann.
144 Resection of the Superior and Middle Cervical Ganglia of the Sympathetic for Subacute Glaucoma. Presentation of Patient. Melville Black.
145 A Secure Stitch for Advancement Operations. Frederick Herman Verhoeff.
146 *A New Formed Physiologic Macula. James Bordley, Jr.
147 Chorioretinitis Striata. J. Wilkinson Jervey.
148 Some Remarks on the Use of the Clock Dial Chart in the Refraction of Astigmatism. J. S. Johnson.
149 Hemorrhage into the Orbit of a New-born Child. C. D. Conkey.
150 A Method of Measuring the Amount of Ciliary Spasm by Means of the Shadow Test. R. W. Place.

Oklahoma Medical Journal (Guthrie), September.

151 Should the Determination of Insanity in Law Differ from the Determination in Medicine? C. H. Woods.

Journal of Medicine and Science (Portland, Me.), October.

152 Therapeutics. S. C. Gordon.
153 The Relation of Animal Diseases to Public Health. Don D. Grout.

Alabama Medical Journal (Birmingham), October.

154 Intravenous Saline Infusion. J. M. Mason.
155 Maternal Impressions. Thomas D. Parke.

Therapeutic Gazette (Detroit, Mich.), October 15.

156 *Esophagotomy in Children for Foreign Bodies, with the Report of a Case Aged Sixteen Months, and the Removal of a Metal Clasp Which Had Been in the Gullet for Seven Months. William J. Taylor.
157 *Narcotic Drug Habits and Their Treatment. George E. Pettey.
158 Two Cases of Boric Acid Poisoning. J. F. Rinehart.
159 The Treatment of Prostatic Hypertrophy by Dilatation. John A. Ciminger.
160 Suprarenal Extract and Adrenalin in Internal Medicine. A. L. Benedict.

Medical Review of Reviews (N. Y.), September 25.

161 Hereditary Syphilis. A. Jacobi.
162 A Physiologic Study of Anarchy. William B. Noyes.

New Yorker Medicinische Monatsschrift, September.

163 Milchzucker in der Sauglingsnahrung. A. Jacobi.

Charlotte (N. C.) Medical Journal, October.

164 *Sigmoidopexy for Prolapse of the Rectum. D. M. Mott.
165 Ovarian Tumors Requiring Removal, with Report of Cases. E. C. Davis.
166 Some Suggestions of the Treatment of Fractures of the Shaft of the Femur. H. P. Colle.
167 Ethics of City Physicians. S. A. Oren.
168 Hospitals in the Smaller Towns. A. L. Beachman.

Memphis Medical Monthly, October.

169 Sigmoiditis: Its Etiology, Pathology, and Treatment. Presentation of Case. John L. Jelks.
170 Typhoid Fever: Essentially Still a Widely Prevalent Disease. John A. Blackmon.
171 Eye Complications in the Acute Infectious Diseases, with Report of Cases. George S. McReynolds.
172 The Trained Nurse. Byron Robinson.
173 Acute Inflammatory Edema, and Abscess of the Larynx. Lubet-Barbon.

New England Medical Monthly (Danbury, Conn.), October.

174 Erysipelas. W. L. Smith.
175 On the Treatment of Meningitis with Unguentum Credé. F. Daxenberger.
176 The Prevalence and Treatment of Gout. Charles W. McIntyre.
177 Saccharomyces Cerevisiæ, Its Physiological Action and Therapeutic Value. L. H. Warner.
178 A Useful Article for the Surgeon's Grip. S. Green.
179 Treatment of Primary Syphilis. Frank H. Washburn.

Medical Times (N. Y.), October.

180 Modern Views on Paresis. D. K. Mills.

AMERICAN.

1. **Transmission of Tuberculosis.**—Repp reviews the questions of the transmission of tuberculosis by meat and milk to animals, both experimentally and by natural methods, giving abstracts from the literature, and also the question of the similar transmission to man. There is no experimental evidence whatever of the transmission of tuberculosis to man by tuberculous meat, and its transmission by natural methods in this way is only presumptive. Of course, meats, if thoroughly cooked, destroy all the danger. As regards milk the evidences, though comparatively few, give presumption that it is possible.

2. **Prostatic Hypertrophy.**—Whalen's article gives the symptoms, diagnosis, and treatment of enlarged prostate. He thinks that dilatation with steel sounds or dilators has a certain value, but it has never given complete relief. Operations for drainage are only palliative measures. Where permanent drainage is to be established, he prefers it by perineal urethrotomy rather than suprapubic drainage. Galvanopuncture, iodin injections, and ligation of the internal iliac are obsolete methods as is also castration. He does not favor vasectomy as recommended by Harrison. Perineal section and enucleation as done by Nichol and Alexander are of value in selected cases if the removal is complete, but operations which do not attack the hypertrophy of the lateral lobes are not radical and can not effect a permanent cure. Suprapubic section or prostatectomy is the most curative procedure and if there is a suspicion of stone or tumor, it will always be found most satisfactory. The operation advised by Belfield, of combined suprapubic and perineal section, is often done, but personally he has never had any difficulty in removing the hypertrophied prostate by simple suprapubic section. Where it is difficult, a great help will be found by placing a finger of one hand in the rectum and exerting counter-pressure while enucleation with the other forefinger is being done. Lack of thoroughness and care in selecting cases is responsible for the difference of opinion regarding prostatectomy. The mortality, he thinks, is largely due to the advanced stage of the disease and the poor systemic condition of the patient. The Bottini operation, he believes, is palliative in most cases. He thinks that this and prostatectomy are the only procedures to be tried at the present time. The larger the prostate, the more favorable for prostatectomy, while for the smaller ones the Bottini operation is indicated. Prostatectomy should not be done as a last resort; the time to do it is before great damage has been done to the bladder and kidneys. If this plan is followed and spinal anesthesia used in place of the usual anesthetics he thinks that the mortality of prostatectomy can be brought as low as, if not lower than, the Bottini operation and that the results will be far better.

4.—See abstract in THE JOURNAL, xxxvi, p. 1726.

9. **Splenic Anemia.**—The continuation of Wentworth's article in this issue is largely a review of the literature.

10. **Ambroise Pare.**—The conclusion of the memoir of Ambroise Paré by Cumston is here given, with notes on some of his contemporaries. It forms an interesting historical study and the author has evidently devoted considerable research to the subject.

11. **Tubercular Peritonitis.**—In this concluding portion of Fontaine's article the treatment is discussed and the various theories as to the effect of abdominal section are noticed, but the author does not, himself, express a preferential judgment. The percentage of recoveries in the surgical cases is evidently not too encouraging—from 25 to 35 per cent. The percentage

of mortality increases the longer the cases are observed. It is evident that the surgical treatment of tubercular peritonitis is far from being settled. In fibrous, caseous or ulcerative cases surgery reports only bad results and has no effect except as a palliative for bowel constriction or grave complications. In cases of ascites and encystment both medical and surgical methods have strong claims, and only long and more frequent observation of the results will decide for which the balance lies. The author thinks that in complicated cases it is better to give the medical treatment a thorough trial because there is already a tendency to spontaneous recovery and medical measures may suffice. The results from the medical treatment seem to be about as good as from the surgical treatment, and the latter will be as efficacious a little later on, if found necessary. The medical treatment advised seems to be to keep the alimentary canal aseptic, to prevent local irritation, to use proper diet, ice-bags, and in acute cases, for the first few days, to treat like an acute peritonitis. After that, no opium, but hot fomentations for the pain, if necessary. Keep the diet fluid, use calomel and salines in divided doses, intestinal antiseptics, tonics and such general remedies as are supposed to be curative for tuberculous affections. The treatment should continue for several months under careful observation. In no case should we forget to add the tonic influence of fresh air, which has so much benefit in this as in other forms of tuberculosis.

13.—See abstract in THE JOURNAL, xxxvi, p. 1582.

15. **Biopsy.**—The name biopsy is given by Besnier to a sort of autopsy on the living, consisting in excision of eruptive lesions or fragments of tumor for the purpose of histologic examination. The advantages of it are in furnishing a means of diagnosis, and the disadvantages are slight. The patient can usually be brought to consent. The operation done under asepsis avoids infection and the time required for the removal of the part and the pain are exceedingly slight. The preferable instrument is the sharp Graefe knife, which cuts out the flap pinched up, including the desired piece. Hemorrhage is usually insignificant. Local anesthesia may be generally dispensed with and cocain injections are undesirable on account of the edema they produce. The incised tissue should be at once immersed in the fixing agent that has been chosen. Biopsy is indicated whenever the practitioner is face to face with a cutaneous lesion, or an accessible lesion of the mucous membrane, where definite diagnosis can not be otherwise made. In tumors and ulcerations of doubtful character tending to infect surrounding tissue the indication is absolute and pressing, though in other cases diagnosis may not be so imperative. The greatest use of the method is for the clearing up of epithelioma-appearing cases, etc. These are often difficult to distinguished from tuberculous ulcer, gummata, actinomycosis, lupus, and various other conditions. Cutaneous tuberculosis also furnishes frequent occasion for fruitful resort to biopsy, and syphilis and leprosy must also be taken into account, also mycosis fungoides, and sarcoma. Biopsy is optional in benign malignant tumors, which are troublesome on account of their number and persistency. In special cases Darier has resorted to biopsy for the diagnosis of certain common dermatoses, which in atypical forms present problems in diagnosis. He says to sum up: "Biopsy is an operation which furnishes an easy and rapid means for establishing or confirming a diagnosis otherwise impossible or doubtful in the case of various dermatoses and cutaneous tumors. It is too often neglected by some, and very rarely employed by others. For this reason he has believed it worth while to recall it to the attention not only of dermatologists but of physicians and surgeons generally.

17.—See abstract in THE JOURNAL of July 13, p. 138.

20. **Resistance Exercise.**—The use of resisted movements of the part of the body in which the definite resistance is to be governed, with the object of strengthening the muscles which cause the movements, is by Little referred to under this head. He says that they are useful in various deformities of the foot and hand and describes the methods, especially an automatic arrangement. To make the child, especially the young ones, who are difficult to get to apply themselves to these exercises, he has devised an arrangement whereby the proper movements can be affected by ringing of a bell, and very few children can resist this temptation. In order that they should not tire of the exercise it is essential that they should not be allowed to play with the machine too long. Its use should be reserved for stated periods and be made rather a treat than a task. In an intelligent child of 10 years or more this is hardly required, but in many cases it is better to substitute the resistance of a small weight to that of the nurse's hand on account of any possible carelessness on her part.

21. **The Lane Lectures.**—Morris defines syphilis as an exanthematous fever diluted by time, and discusses its cutaneous manifestations, the polymorphous character of the lesions, hereditary syphilis, modes of inoculation, diagnosis and treatment. He favors the early use of mercury before the constitution has become infected and this continued with occasional intermissions for two or even three years. The worst of the aggravating agencies is alcohol, and tobacco still further aggravates the condition. He suggests as a prevention a sort of social ostracism; if the contamination of a healthy person through the carelessness of a diseased one who knows himself to be such could be made a criminal offense, it would be still better. The prevention of syphilis has become a matter of urgency in Europe, as according to Fournier, it is more serious than it was of former years. The public should be wakened to the importance of a systematic effort to stamp it out. Leprosy is also considered, and its prodromal period, which may extend over years, the evolution of the disease and other manifestations, its geographic distribution, its relation to colonization and undoubted contagion are discussed. He gives some remarks also in regard to medieval leprosy and points out that the segregation of lepers is a necessity to stamp out the disease.

26.—See abstract in THE JOURNAL of October 5, p. 930.

27. **Transmission of Yellow Fever.**—The mosquito theory of the transmission of yellow fever is endorsed by Doty, who finds that while it is not yet demonstrated that there may not be other means, it is really evident that the disease is not contracted by personal contagion or through the medium of clothing, bedding, cargoes and vessels. He thinks we are justified in changing the quarantine regulations to conform with the latest views.

29. **Cinchonism and Hearing.**—Seiler finds from experiments with a complete set of test tuning forks and occasionally a musically trained subject, that the ordinary tinnitus aurium due to middle-ear disease never transgressed the limits of pitch from d-1 (297 vibrations as the lowest point) to f-2 (704 vibrations as the highest), and that these subjective noises had no effect on the vocalization or articulation, but that they would invariably affect the sounds which had the same or nearly the same number of vibrations per second. The subjective noises of so-called cinchonism, as produced by the various drugs such as quinin, sodium salicylate, etc., he found to be invariably of a very high pitch, varying from as low as the g-3 (1584 vibrations) to as high as the i-4 (3960 vibrations) and often even higher. In the few cases of musically educated persons whom he has examined and who were familiar with the aural analysis of sound, inquiry elicited the fact that the noise was composite in character, being made up of a variable number of individual sounds. These were sometimes harmoniously blended to form a chord, the fundamental tone of which was always constant in pitch, but varied with the drug producing the noise—usually the lowest with quinin, and the highest when sodium salicylate produced the subjective aural sensation. The third fact which he observed was that any composite noise of high pitch, such as is produced by the hissing or escaping of steam or the noise of rapidly-revolving grindstones, not only interfered with the pronunciation of those consonants, which, according to the investigation of Helmholtz and others, have for their characteristics a combination of sounds of very high pitch, th, s, sh, and z, and the

like consonant sounds of articular speech, but also caused them to be most easily obliterated and consequently most difficult to be appreciated and recognized by the ear. This fact, which is quite familiar to steam engineers and grinders, is to be explained by the well-known acoustic law of interference. The acoustic or physical laws fail us completely when a subjective, in reality physically non-existing noise, such as that of cinchonism, materially interferes, as it undoubtedly does, with the pronunciation of those consonants of high-pitched composite characteristic sounds and even alters the quality and timber of the high-pitched vowel sounds. He does not offer any explanation or hypothesis of what is to him an inexplicable but undoubtedly existing influence of purely subjective and non-externally produced sensations upon a purely physical phenomenon such as vocalization and articulation.

32. **Gouty and Obese Respiratory Conditions.**—The abnormal respiratory conditions in sufferers from obesity have not, Anders says, been studied as much as they deserve. Their pathogenesis is not clear, but the mechanical embarrassment from the deposition of fat throughout the body will largely account for them. He has found the respiratory capacity by actual measurement to be less than 2.5 inches in obese subjects, and it is obvious that such interference with lung expansion must excite dyspnea upon muscular exercise, or over-distension of the stomach and even during recumbency. Dyspnea is more marked in the anemic than the plethoric variety, in which latter type there appears to be compensatory hypertrophic changes in the muscular structure. One thoracic symptom belonging to over-fatness especially mentioned, is pain in the subscapular and intrascapular muscles, which may be acute on moving the organs or attempting to maintain an erect position. The restrictions of thoracic excursions in the respiration and the enfeebled heart action combine to cause passive venous congestion of the bronchial mucosa. Thus we have in obesity a hyperemic bronchitis with troublesome cough and sometimes copious mucoid expectoration, aggravated by weather changes, irritants, etc. The physical signs are variable. Closely connected with this is asthma, which is usually regarded as of cardiac origin, but is favored by respiratory activity. There is also an asthma in obese cases due to gastric disturbance. The active stage is also an accompaniment of obesity and there are reasons to think that both these are dependent upon liver inadequacy. Personal experience leads Anders to think that severe paroxysmal dyspnea seen in obesity is in many cases not a true asthma; it is relieved by assuming and maintaining the erect posture for a short period. When asthma does occur, however, as well as with these cystic dyspneas, the effect of the usual treatment to reduce body weight is liable to aggravate the asthmatic symptoms. His own conclusions as to the question of the relation of the asthma to polysarcia are: 1, that asthma occurs in about 5 per cent. of the cases of obesity; 2, that it only occurs in extreme polysarcia; 3, that there is present a gouty state or history in most cases in which true asthma is secondary to obesity; 4, that about 50 per cent. or one-half of the cases are curable by overcoming the causative condition. He also mentions the bronchial affections in their relation with gout and the association of gout with over-fatness. Asthma may be caused by gout independently of obesity and the usual treatment of such cases is by the antipodagral remedies. There are cases where lithemia rather than gout exists, as shown by high urinary acidity, diminished renal inadequacy, etc.

33. **Nephorrhaphy.**—The title of this article is rather misleading, as only the first part of it refers to the use of adhesive straps instead of sutures for closing a nephrorrhaphy wound. The larger portion of the article refers to the recognition of misplaced kidney and the operative measures required for its relief. Goelet gives the symptoms which indicate prolapsed kidney, such as chronic congestive disturbance, nervousness, fatigue, palpitation, epigastric pain, dragging pain in the loin, inability to rest on the left side, bladder irritability, jaundice, pain simulating appendicitis, ovarian trouble, renal colic, etc.

34. **Multiple Malignant Neoplasms.**—Warthin describes a case with autopsy where there were sarcoma, carcinoma, and myomata co-existing. Coley's serum was ineffective and he finds that it produced simple necrosis in parts where it was injected, and suggests that if spontaneous necrosis and degeneracy so frequent in malignant tumors is to be regarded as one of the factors in the production of tumor cachexia, excessive necrosis produced by injections of toxins must be favorable to the rapid development of cachexia, with also the dangerous systemic effects of the substances injected.

40. **Dysentery.**—Monroe considers that dysentery is often produced by exposure and that straining at the stool may often induce sufficient irritation to cause it. He thinks also that dysentery is contagious and he noticed that it seemed to be communicated in one case by a bed which had been used by a former sufferer and in others by the use of houses which had been closed for months after dysentery had occurred in them. Therefore, he thinks, in the epidemic form it will be well to isolate patients, thoroughly ventilate houses, frequently changing the bed and clothing and disinfecting discharges and other exposed articles. In epidemics he has found it good to begin with calomel, then followed with quinin and subnitrate of bismuth when the discharges change. In some epidemics he has given tincture of opium and castor oil mixed every four hours after using calomel. He does not see any benefit from astringent injections. He disbelieves entirely in the serum treatments, or rather says he thinks all have more or less of a humbug in them and credits any effects to carbolic acid which is combined with them all.

41. **Malaria.**—Favill insists on the diagnosis of malaria being confirmed before specific treatment is commenced and he has long since come to withhold his prescription of quinin until he has made a microscopic diagnosis. If we go ahead and give quinin and the case is troublesome or dubious the evidence of infection that we are trying to establish may be destroyed, though it may be there all the time. Quinin is not of diagnostic value in a multiplicity of cases. In this part of the country we should see but few cases of estivo autumnal fever and they are most likely to give trouble. It is hard to say always what is the best to do with a case of estivo-autumnal fever; it runs such a course, baffling and irregular, so as to be almost beyond our therapeutic reach. When we have decided to give quinin, the question is how much? It is a grave question whether we should treat the case hypodermically or not. The reason quinin does not act when given by the mouth is because it is not absorbed by the intestinal canal. He asks: What alternative administrations have we? Three, hypodermic, rectal and intravenous. The rectal method is unsatisfactory, but he has seen cases where he did not dare to resort to the hypodermic administration and the rectal method had to be relied upon. The hypodermic administration of quinin is possible and extremely effective, but there are objections to it, especially the dangers of local necrosis, and the condition of the patient favors this sometimes. The difficult question to settle is how much good quinin will do in certain cases, between the final results and the infection. Have we here a disease infection or have we its indirect result? Unfortunately, in most cases the diagnosis in this respect can not be made and we give quinin because we have nothing else to do. The rejuvenation of the blood becomes an important question in the terminal aspect and here comes in the use of judgment and experience in therapeutics. Finally, the best way to administer quinin in simple cases where there is a distinct paroxysm, is before the onset of the paroxysm, or during it, but we have few of these cases now. For the most part the drug can be given throughout the day and will almost invariably fulfill its purpose. The drug must be administered according to the necessities and possibilities of each case; the point is to get it into the blood in sufficient quantities. This leads to the statement that there is no such thing as a dose of quinin. The dose of quinin is what will produce the desired effect, whether it be 3 or 30 grains and this will depend on the conditions of the case.

51. **School Text-Books on Physiology.**—In the opinion of Scott, a good common-school text-book should first have its

teachings such as are sustained by the most recent scientific investigations. 2. It should represent sufficient anatomy. 3. It should give due emphasis to the cellular microscopic structure of the tissues so that the cell activity of the organs can be comprehended. 4. The physiologic anatomy of the body should be so explained as to be within the comprehension of the pupils. 5. The physiologic processes should be so emphasized that they will stand out as distinct. 6. Sufficient emphasis should be placed upon hygienic matter, which, however, should not be distributed through the book, but given after the other parts. He goes over the text-books that have been offered and points out their defects and merits as they appear to him. Martin's "Human Body" is too illogical in its order and arrangement, but the later revisions are better than the former ones. The best book of all which he speaks of is Thornton's "Physiology," which is more nearly ideal than any he knows of, though he speaks well of Colton's and Blaisdell's physiologies also.

52. **Hemorrhoids.**—The operation mentioned by Mason for the cure of internal hemorrhoids consists in first preparing the patients with cathartics and enemas and restricted diet and then inserting a pledget of cotton saturated in a 10 per cent. solution of cocain, up the anus about two inches. After about five minutes the piles will be partly free from sensation. Then have them forced out by the patient, if possible, if not, by other means, and grasp the tumor lightly at the base with the notched clamp and inject it full with a 2 per cent. solution of cocain. After about a minute a clamp is closed as tightly as possible and all the piles above the notched edge cut off. With a curved needle threaded with catgut, stitches are passed through each notch and tied tightly and after all are tied the clamps are removed and a neatly closed wound that heals by primary union is the result.

60.—This article has appeared elsewhere. See abstract in THE JOURNAL of October 19, ¶18, p. 1067.

67.—See abstract in THE JOURNAL, XXXVI, p. 1650.

69.—See abstract in THE JOURNAL, XXXVI, p. 1653.

70. **Cesarean Section.**—A case of Cesarean section is first reported by DeLee and the relative propriety of the different operations in cases of dystocia discussed. He argues for the propriety of craniotomy in certain cases, holding that the mother is more important notwithstanding the teachings of the Catholic church. While the mortality from Cesarean section is comparatively low, it still is sufficient to make the operation a serious one, while that of craniotomy may be said to be absolutely *nil* at the present time. We must consider that fact that a large proportion of children die in early life, which would affect the value of the child's life as compared with that of the mother. There is also the possibility of the child being a monstrosity, idiot or imbecile and he asks what we would do if the child were illegitimate or if the patient was a dwarf, imbecile or criminal. Would it be desirable to perpetuate or multiply such cases? The physician, he thinks, is legally and morally obliged to obtain permission, however, to perform any operation and in case of division of opinion, the mother desiring a child, and the father desiring, if possible, to save the life of the mother, he thinks the husband's word should be the governing one. In any case the fact should be thoroughly laid before the parties concerned and if permission for Cesarean section is not granted the following courses are open: 1. Expectancy. Not infrequently the calculations of the obstetrician have been entirely upset by nature and a child spontaneously born. 2. Prophylactic version. 3. High forceps. When these fail craniotomy steps into its right. No man should wait until the patient is in actual danger or use forcible means to save himself by reason of the morbid sentimentalism against having destroyed a child. If the child is still-born or dies in a few days he has destroyed it in the worst possible manner as far as both mother and child are concerned. In advanced cases the mortality of Cesarean section is much higher than when performed early and may be out of the question. When the patient has been in labor more than twenty-four hours, when she is presumably infected, when operation has been attempted by unskilled hands, Cesarean section and symphysiotomy should be prohibited. The child should be sacrificed and premature labor induced, or the former operations under ideal conditions may be then performed.

75. **Toxicity of Urine in Pregnancy.**—In this article Stewart reports experiments which seem to indicate that all the fresh urine which killed mice must have contained microorganisms at the time of injection and in every case septicemia or the presence of bacilli could be demonstrated in the blood. Urine passed by the patient over boric acid usually contains a convulsive poison which is deadly in 100 per cent. of cases, and when the urine is drawn by catheter under strict surgical asepsis the mortality is greatly reduced, and when the urine is so drawn and immediately boiled the mortality is still further lessened.

76. **Prolonged Pregnancy.**—In the case here reported by Taussig, the woman had three pregnancies while under observation, two of normal length and one in which without question the duration of gestation lasted 323 days. She was able each time to fix the date of last menstruation. The child died in each case shortly after birth so that there was no question of amenorrhea from lactation. He reviews the published cases of prolonged pregnancies and says that we have here a mass of evidence which should make the most conservative acknowledge that this condition occurs in the human race and it has long since been proven to occur in lower animals.

79.—This article has appeared elsewhere. See THE JOURNAL of October 5, ¶45, p. 941.

87. **Varicocele.**—Bradley recommends the suprapubic operation for varicocele, that is to say, tying the veins near the inguinal canal. He finds by correspondence with military surgeons that the method has been in use by Major Banister, who describes it as one of the most successful surgical procedures, without risk to life and well adapted to military service, and by Major Borden, who believes that varicocele should never be considered a cause for discharge, but operated upon in this manner. Bradley's method of performing the operation is locating the cord first by palpation and making an incision directly over the external ring, 1 to 1½ inches long. After reaching the sheath of the cord and opening it, enlarged veins frequently present, which can be picked up, drawn out and excised. They are separated by blunt dissection and ligated one-half to three-fourths inch above the testicle by two catgut ligatures. The veins thus ligated off are excised and the stumps drawn together by ligatures left long enough for this purpose. After tying, the approximation is made more perfect by threading the ends of the ligatures and taking a few continuous sutures. The cord is now replaced in the sheath which is closed by fine catgut continuous sutures; the deeper tissues are approximated by continuous catgut and the skin by subcuticular silkwormgut. A sterile cotton collodion dressing is applied and a suspensory bandage. In a week the dressing is removed, the silkworm sutures taken out and a suspensory worn for some time thereafter.

99.—See abstract in THE JOURNAL, XXXVI, p. 1414.

100. **Celloidin Capsules.**—McCrae has studied the agglutination phenomenon by the method of enclosing the bacilli in capsules inserted into the abdominal cavity of animals, and in this article he gives the description of making these capsules. He fits the body of an ordinary drug capsule over the end of a tube which is constricted a little above its end. The tube is heated and then the capsule melts on the tube. Then both are plunged into a thin liquid celloidin so that it adheres directly to the capsule and the glass and this is repeated until the desired thickness of celloidin is obtained. The gelatin is then melted out by filling the capsule with water and placing in a test tube half filled with water and then heated in an autoclave. Into a capsule thus prepared a culture is inserted, care being taken not to wet the glass of the tube which is well fused with a blow-pipe flame, thus making a sterilized capsule. 1. He found that the capsules thus made allowed dialysis when placed into the peritoneal cavity. 2. The normal tissues, un-

stimulated, do not possess the power of causing agglutination; they do not require to be stimulated by the presence of the bacterial bodies, but will produce their share of the agglutinins when acted upon by the bacillary products. 3. Agglutination follows the insertion, in the peritoneal cavity, of "capsulated" bacilli; it gradually increases in degree, and on the removal of the capsule, containing the bacilli, begins to disappear. 4. Varieties of bacilli, related closely in morphology and cultural reactions, do not, as a rule, produce serums which inter-agglutinate.

101. **Hypodermic Injections.**—Meltzer has tried experiments with multiple injections as compared with single ones in the rabbit and he finds that the former, though the total amount of substance injected is less, are more effective. Thus the distribution of a certain quantity of poison among several places of the body is more effective than the injection of the same quantity in a single dose into one place.

102. **Cyclic Albuminuria.**—The authors report a case of cyclic albuminuria in an otherwise apparently healthy young man in which they noticed the excretion of proteid from hour to hour under various conditions and point out the independence of changes in the diet or medicine. No relationship between the volume of urine eliminated and the quantity of proteid excreted has been ascertained, but the albuminuria was checked while the patient was in a horizontal position. Mendel and Hooker say the attempt to refer this to attendant circulatory changes in the kidneys is, for the present, no more than an interesting speculation.

110.—This article has appeared elsewhere. See THE JOURNAL, XXXVI, ¶23, p. 843.

111. **Chloroform-Oxygen Anesthesia.**—Wohlgemuth's article describes his method of employing oxygen combined with chloroform with the view of avoiding asphyxia and describes his apparatus. The details of the latter are too elaborate to be given here. His experience with this form of narcosis comprises, so far, more than 300 cases, which he thinks is sufficient to authorize him to bring his experience before the profession. He has never seen any signs of suffocation, and patients who bore ordinary anesthesia badly stood this method splendidly. In twelve instances the weak irregular pulse improved during narcosis. 166 patients were fully conscious immediately after operation; 13 required between 8 and 30 minutes, and 1 slept three hours; 21 dispensary patients got off the table and walked home. Kidney irritation was never observed and he thinks with this method an overdose of chloroform is impossible. He hopes that future trials will establish the value of the method.

113.—See also title 79.

115.—This article has appeared elsewhere. See THE JOURNAL of October 19, ¶62, p. 1066.

121. **Symblepharon.**—In the case reported Marple has employed the Thiersch grafts with success in a case of symblepharon. The method is not new, since Hotz used it in 1893, and others a little later. He describes his technique and remarks that the grafts should be from one-third to one-half larger than the surface to be covered, as allowance should be made for subsequent shrinkage. Whether to introduce the grafts the same day the symblepharon is divided will depend upon the amount of bleeding; if slight, there is no objection to proceeding at once. It is best to use a shell of transparent glass to protect the cornea. If there is much pain and infiltration the shell must be removed. In dividing the symblepharon it is important to obtain a pouch of normal depth so that the lids are easily closed over the shell after it is introduced. In the case presented the operation was done with success two years ago and the results seem to be permanent. He does not wish to be understood as advocating the use of Thiersch's grafts in all cases of symplepharon. In many cases we can get along without them, but in several of his own cases he is sure that no other method would have succeeded nearly so well. The grafts are taken by him from the inner surface of the arm.

124. **Quackery.**—The dangers and temptations of quackery are noticed by Fronczak, who offers the following suggestions for its prevention: In the first place medical schools should admit only young men whose antecedents, surroundings and personal character are such as will not admit of any probability that they will afterwards dishonor them by quack methods. The son of a patent-medicine man will possibly follow some such a course as the father, and the employe of a cure-all medicine office will surely use the quack tactics of his former employer. 2. The medical student ought to be an educated man to a high degree, a liberal man, though one that will not tolerate anything outside the confines of honesty of judgment, common sense and morals. After graduation from a course of at least four years he should have hospital experience of one or two years. A thorough knowledge of medical science thoroughly equips the physician and at the same time prevents him from diverging to the side-track of dishonesty or quackery. 3. The medical students should be taught all the simple means of healing and nursing. They should be forewarned against imposters and attempt to protect the community by exposing quack methods. 4. They should try to popularize as much as possible writings on hygiene and simple medical preventatives. 5. Physicians should never antagonize one another or speak ill of one another or use unethical or improper means of securing practice. In using such they lower the standard of the profession both with themselves and the public and open the field for quacks. 6. State restrictions to practice of medicine should be such as to insure competent physicians and every transgression of the law should be severely punished. The contents or ingredients of all patent medicines should be printed on every bottle or vial and all conspicuous and nauseating advertisements should be prohibited. 7. The medical press of the country should give due notice of all quacks in their neighborhood and the method employed by these and provide physicians with valid and strong arguments to be used against quacks on every occasion. They or the medical societies should see that the newly settled quack should not be allowed to linger. Finally, physicians should be careful in giving their opinion on all new drugs that have not been thoroughly tested or tried. It gives the quack the excuse to say that the medical men do not really know what is good, but condemn one day what they praise another, and try things on their patients dangerous to life and health.

125. **Major Obstetric Operations.**—The conclusions to which Reynolds has been led are as follows: "1. When the conditions are such that the child can be delivered with anything like reasonable ease by forceps or version, one of these operations is preferable to any cutting operation. 2. When the mechanical relations would render forceps or version unusually difficult, forcible and prolonged, and when the mother is in the favorable class, the equally low maternal mortality and the far lower fetal mortality of the Cesarean section renders it the operation of choice. 3. When the mechanical conditions make the intrapelvic delivery of an intact child at term impossible or unduly difficult, the great superiority of Cesarean section over the induction of premature labor in fetal mortality and its extremely low maternal mortality render it again the preferable operation. 4. When the ordinary operations fail and the woman is in the unfavorable class, symphysiotomy is the operation of choice and may be expected to lead to a favorable result for both mother and child in the great majority of cases, provided always that the degree of mechanical difficulty permits of its application. 5. When in the unfavorable class of cases, the degree of relative disproportion between head and pelvis is too great to admit of a safe symphysiotomy, craniotomy to the living child should be unhesitatingly chosen, since the maternal mortality of either form of section is so enormous, and because I can not doubt that the life of the potential mother of many children is of more value than that of any one unborn fetus." He thinks that if these principles are true there are but few if any cases of uncomplicated mechanical obstruction in which a happy outcome is not within the power of prompt and intelligent medical care if applied early. He insists on the value of pelvimetry and thinks that

any one having a first case of labor in a patient should calculate all the possible contingencies of mechanical obstruction.

126. **Hysteria.**—Hysteria is not confined to the human species, and Ullman reports several cases from the literature, of it occurring in dogs and other animals. In the human species it does not belong to any time, nor is it peculiar to any race. There are certain etiologic factors which if allowed to play will cause definite symptoms of this disease to appear in any race. The influence of emotions such as traumatism, general disease, such as typhoid, etc., and the influence of sexual organs, and intoxication. The Israelites appear to be more especially subject to this condition, and he explains the fact by their heredity and antecedents. In the black race he believes that it occurs in their native state, and in spite of the observation of Hammond to the contrary, the most typical cases of hysteria were very common during the slave period as May has shown. Correspondence with those who have had much experience with the colored race inclines him to believe that the negro is as subject to hysteria as the white with the same intelligence, education and environment. The Indian aborigines of this country were liable to be hysterical, though less so probably than some others. A few individual cases of the trouble have been noted in connection with their religious superstition, but as the Indian becomes more and more civilized he becomes more subject to it. He does not find much evidence of its frequency among the Chinese. He does not believe it is as frequent with them as in the white race. It is a condition common to all people, but it affects certain races more than others, such as the Jewish and Latin peoples. This is due to environment rather than to hereditary antecedent qualities.

132. **Injection Treatment for Hernia.**—A case is here reported of hernia involving principally the omentum with a very small knuckle of the intestine which was reduced en masse, but again came down and called for operation. A large number of adhesions and extensive agglutination was found, which required careful dissection and made the operation tedious and apparently doubtful in its outcome, though the patient ultimately recovered without a bad symptom. The existence of these complications was attributed to the injection treatment which had been instituted about one year before.

140.—See abstract in THE JOURNAL of September 28, p. 850.

143. **Ocular Paralysis.**—In cases of ocular paralysis in the very early stages when there is still a chance for treatment to be effective the diagnosis is sometimes difficult. The limitation of motion is often not demonstrable at all, hence the primary deflection not observable, and secondary deviation not satisfactorily shown. Weymann offers the following three rules; "1. Diplopia appears in the field of action of the paretic muscle. 2. The advancing image belongs to the paretic eye. 3. Paresis of any obliquus or external rectus produces homonymous; any other muscle heteronymous diplopia." Using stained lenses of equal density of tint, but differing color, for both eyes, best fusion colors, shows the binocular single picture in fusion tints, while the changing color of the parting images facilitates prompt recognition. Examples are given showing the application of these rules.

146. **New Formed Physiologic Macula.**—Bordley reports a case where after operation for squint an excentric portion of the retina took up and performed perfectly the functions of the macula, with not only the same acuity of vision as the normal one, but was also capable when stimulated of assisting in the most perfect associated ocular movements.

156. **Esophagotomy.**—The case reported is one in which a child had swallowed a metal clasp and the operation for its removal is here described. Taylor reviews the literature of esophagotomy for such cases and insists on the importance of the Roentgen rays, and the value of their expert interpretation. He believes it is always advisable to attempt to suture the esophagus with catgut, because then if we do not close the wound at first we can diminish its extent. The external wound should be packed with gauze, there being no objection to using one or two sutures at each end to diminish its length. The dressing should be changed very frequently. Boric acid is the strongest antiseptic which should be used about the wound for fear of doing damage. From a review of the literature he feels sure that the question of short and fat neck should not be a special factor in determining our selection of method of reaching the foreign body. We should be guided only by its position as located by the skiagraph.

157. **Drug Habits.**—According to Pettey there are four points in the successful management of these cases: 1, Thorough elimination; 2, support of the vital functions; 3, relief of suffering; 4, entire control of the patient and his surroundings. He believes in the use of hyoscin to relieve the suffering of these cases of morphin habitués. It does not affect the vital functions or leave after-effects and the patient should be kept under its influence for twenty-four hours from the time abstinence symptoms begin to make their appearance. If the beginning course has been thoroughly carried out it will be hardly found necessary to continue the administration of hyoscin more than twenty-four to thirty-six hours and at the end of this time the patient will remain free from pain and nervousness, will sleep from five to eight hours, have no craving for the morphin, and in a few days have an appetite that is hard to satisfy. In most cases no after-treatment is necessary. He does not believe in alcohol or strychnin. Other stimulants should be interdicted. During the period of treatment which under the rapid withdrawal method lasts but a short time the patient should be separated from his family and for ten days to two weeks afterwards to avoid sympathy and over-attention, which have a bad effect.

164. **Sigmoidopexy.**—The operation recommended by Mott is that of McLeod, published in the *Lancet* of July 19, 1890, and described, though not commended, in Treves' "Manual of Surgery." The operation is performed by first making a laparotomy, a 2-inch incision, a little internal to the anterior iliac spine, dividing the muscle layers according to their fibers, opening the peritoneal cavity and reaching with the index finger for the bougie introduced per anum and held by an assistant. This is quickly found, crooked up by the finger and fixed by two stout catgut sutures to the inner side of the wound in the abdominal wall. The suture pierces the peritoneal and muscular coats, but, of course, leaves the mucous lining intact. Close the peritoneum with a catgut suture and the transversalis and internal oblique with silkwormgut. The external oblique was joined by a strong catgut and the skin incision closed by interrupted horsehair sutures. In his case the progress was uneventful, and he thinks, instead of this being an extreme measure as characterized by Treves, it is much simpler and more rapid of performance and causes less shock and loss of blood than complete excision and incurs no more risk than any other ordinary laparotomy operation.

FOREIGN.

British Medical Journal, October 19.

A Discussion on Renal Tension and Its Treatment by Surgical Means. REGINALD HARRISON.—Dr. Harrison calls attention to the evidences that the kidney may be in a congested state and in a condition of extreme tension, causing the cortical tissue to be enormously swollen and changed to a deep coffee color in extreme cases. He compared the condition to that of the eye in glaucoma and suggests the term renal glaucoma as not an inappropriate one. A somewhat similar condition might also exist in the testicle, which results sometimes in sterility. Four illustrative cases are reported and discussed and the surgical method of relief described. In incising the capsule of the kidney for relieving tension he prefers doing so along the convex border, while punctures may be made almost anywhere where the engorgement seems greatest, but he thinks it is well to avoid the pelvis. Drainage is an essential part of the process and may be continued some days or even weeks. As to the question as to which organ should be selected, he thinks there is not much choice unless there is something to indicate it, such as the presence of pain. Both organs are usually involved in an inflammatory condition, though possibly not to the

same degree. In double nephritis, however, relief of tension in the one kidney relieves the other. In the discussion following, Dr. Cousins remarked on the favorable results of the operation for these conditions, and said the most favorable cases for surgery appear to be those associated with acute nephritis and infection through the blood. Tension may be caused by partial or complete retention of urine, from infection or from chronic alcoholism.

Certain **Points in the Operative Treatment of Renal Calculus.** J. HUTCHINSON.—The importance of the Roentgen rays in the operative treatment of renal calculus is particularly emphasized by Hutchinson, who sums up as follows: "1. The *x*-rays (except perhaps in stout subjects, or in the case of very small stones) enable an exact diagnosis as to size, position, and number of renal calculi to be made. 2. They enable the surgeon in performing the operation of nephrolithotomy to do so with the least possible injury to the kidney, and to dispense with bringing that organ on to the surface of the wound. 3. Limited incisions made directly over the calculi through the renal pelvis are to be preferred when practicable. Such wounds of the pelvis heal well. 4. Before the operation it is most important to get the urine into a healthy condition. The administration of urotropin before and afterwards is of much value. 5. Renal calculi, however small, should be operated on as soon as they are positively diagnosed. Their danger to the kidney structure and to the patient's life bears no relation to their size."

Radical Cure of Femoral Hernia. R. H. PARRY.—Parry remarks on the objections to the usual methods of radical operation of closing femoral hernia from below, claiming that efficient support can not be provided for the approximation of structure outside of Poupart's ligament, that the femoral vein is in danger of being injured or compressed and that a depression is left above the crural ring. The method which he proposes consists in exposing the crural ring from above and attaching the conjoint tendon to Cooper's ligament, thus effectually blocking the entrance by structure which can be readily displaced to do this and also be adjusted so as to avoid pressure on the veins. The technique consists first in a curved incision with the convexity downward from a point a little external to the pubic spine to the middle of Poupart's ligament, raising a flap of skin, ligating and dividing the superficial epigastric vessels and exposing the ligaments. The femoral sheath is opened near Poupart's ligament and the sac and adherent fat now turned out as far as possible with the finger. This avoids the saphenous vein. The sac is then opened and the adherent omentum sutured or ligated and removed. When the fat has been removed on the outside surface the sac is usually much smaller than in inguinal hernia, and the rules for the latter can not always be followed in femoral hernia. If its walls are thin and torn it should be removed and the opening into the peritoneum carefully closed. An incision is made through the aponeurosis of the external oblique immediately above and parallel to the inner half of Poupart's ligament. The inguinal canal is opened and its contents drawn aside to define the lower margin of the conjoint tendon. The transversalis fascia is next divided where it passes beneath Poupart's ligament to form the anterior layer of the femoral sheath. The peritoneum is left intact except where necessary to ligate and remove omentum, which can not be returned through the ring. Retracting the parts at this stage affords an excellent view of the upper surface of the ring, the femoral vein and Cooper's ligament. A catgut suture is passed through the fundus of the sac where it is tied and then through the neck close to the parietal peritoneum and finally carried through the transversalis fascia and conjoint tendon. When the suture is tightened the sac doubles up and disappears beneath the abdominal wall; the suture is then knotted. For attachment of conjoint tendon to Cooper's ligament, a strong catgut suture is carried by a sharp curved needle on a handle through the conjoint tendon and transversalis fascia at a point opposite to the outer margin of Gimbernat's ligament, passed horizontally beneath the muscle and fascia for about one-half inch and then brought through them. The inner end of the suture is now passed through Gimbernat's ligament, the outer through Cooper's ligament, and both are brought out in the groin. The second suture is applied in the same way, but while the outer end is being passed through Cooper's ligament close to the femoral vein care must be exercised lest the accessory obturator artery be punctured. Traction on the end of the sutures brings down the conjoint tendon and transversalis fascia over the crural ring, and after it has been determined that no undue pressure is made on the vein the sutures are tied. Two or three medium catgut sutures connect the conjoint tendon with Poupart's ligament to assist in keeping down the tendon, and to strengthen the inguinal canal. The rest of the operation is completed in the usual way, two or three silkwormgut stitches keeping the edges of the skin together, while approximation of the rest of the wound is secured by a continuous horsehair stitch. No drainage of any kind is used. The same procedure has been adopted in strangulated hernia. The sac is opened and the bowel carefully examined. If found in a fit state and the condition of the patient suitable, operation as detailed is performed.

Prevention of Shock During Prolonged Operations. W. H. BROWN.—The method suggested by the author for the prevention of shock consists in having, as soon as the patient is under ether, a competent surgeon open a selected vein and begin to transfuse as the major operation proceeds, the amount injected being governed by the state of the pulse and the loss of blood consequent on the operation. In his cases he has used as a rule about five pints of fluid. The advantages of the method are that everything is at hand and prepared for. There is no emergency operation of transfusion in cases of extreme shock. Everything is prepared for beforehand. He thinks many times such a method would enable one to bring to successful issue cases which would otherwise succumb to the extra shock of operation.

The Lancet, October 19.

The Treatment of Hemiplegia. LEONARD G. GUTHRIE.—The following is the summary of Guthrie's article as regards the treatment of hemiplegia: "1. Neglect and want of treatment aggravate severe, and retard the recovery of mild, cases. 2. The evils to be foreseen and guarded against are articular adhesions, late rigidity, and muscular atrophy. 3. Articular adhesions should be prevented by passive movements of each joint from the very first. 4. Faulty positions of the limbs should be constantly corrected or they will become chronic. 5. Contraction of muscles should be treated by endeavors to improve the nutrition of their weaker opponents. 6. Massage, passive movements, and to a less extent, electricity, should be used with this object. These agents not only counteract muscular atrophy from disuse, but probably take the place of normal stimuli and invigorate the neurons. 7. The recovery of mild cases may be often hastened by re-education of movements. Want of re-education frequently prevents recovery. 8. Re-education consists in a combination of passive and active exercises. 9. Movements should be first encouraged in those parts which naturally tend to recover first. 10. Incoördination and general weakness of limbs which have yet regained power of movement should be treated by exercises and mechanical therapeutics. 11. It is important to find out what the patient can do and to make him do it."

Journal of Laryngology, Rhinology and Otology, October.

The Principles of Treatment of Tuberculous Laryngitis. ST. CLAIR THOMSON.—The principles to bear in mind in tuberculous laryngitis according to Thomson are as follows: "1. Pathology and clinical experience show that in the majority of cases the focus of infection is near or in the cricoarytenoid joint. 2. Many cases only present themselves at a stage when the possibility of effecting a cure by local measures is quite untenable. 3. The principle of *primum non nocere* should be constantly kept before us, as many measures which have been tried in this affection have only distressed the patient and hastened the disease. 4. In the light of present knowledge and therapeutic resources, the most rational principle is to attempt to make an early diagnosis of the disease while in an in-

cipient stage. Any persistent or suspicious laryngeal catarrh should be treated seriously on even a presumptive diagnosis. 5. Once diagnosed, the patient should be treated on the principles laid down in the modern method of sanatorium treatment. 6. Symptomatic treatment should be directed to an irritative, catarrhal, or obstructive condition of the air-passages. 7. In addition, silence should be enjoined, the disuse of the voice being proportionate to the degree in which the focus of infiltration approaches or interferes with the arytenoid joint. 8. In cases where the situation or extent of disease do not warrant an expectation of complete arrest of process, treatment should be symptomatic, and in many cases the sanatorium treatment is uncalled for."

Presse Medicale (Paris), September 28.

Lecithin in Tuberculosis. H. CLAUDE and A. ZAKY.—Guinea-pigs inoculated with tuberculosis and then treated with lecithin, survived much longer than the control animals. The general health was much improved and resistance to the infection evidently augmented. Similar results were observed in twenty-one clinical cases. The lecithin rapidly modifies the nutritional processes; the amount of phosphorus that is eliminated is very much decreased, while there is a constant tendency to progressive increase of the co-efficient of the utilization of nitrogen. In the early stages of tuberculosis the effect of the lecithin was marked in the remarkable increase in the appetite and weight and improvement in the general health. "The absolute harmlessness and the undoubted benefit to be derived from lecithin render it a very valuable adjuvant in the treatment of tuberculosis." Six pills of 5 eg. each were the average daily dose.

Ko-Sam as a Specific for Dysentery. COGNACQ.—Ko-sam is a Chinese drug, which has a remarkable local action on dysentery by reflex vaso-constriction. It has both hemostatic and cholagogue properties, and in Cognacq's experience with twenty-five cases of acute dysentery, proved an actual specific. It is the seed of a shrub which grows in Petchili and is agreeable to take, with no after-effects except occasionally slight, transient gastric disturbance.

October 9.

Orthostatic Albuminuria a Relic of Infectious Disease. C. AUBERTIN.—Orthostatic albuminuria is not a distinct morbid entity, but is merely a variety of albuminuria dependent on certain conditions in the circulation, but always on the foundation of some more or less characteristic renal lesion. In five cases observed by Aubertin, it first appeared during convalescence from scarlet fever, and was accompanied by symptoms indicating an acute nephritis. Reviewing the cases that have been published, Aubertin notices that some preceding infectious disease is mentioned in nearly every case, and is not excluded in the others. In his cases the albuminuria was purely orthostatic, that is, it occurred after standing, without fatigue. It was uninfluenced by the diet, or muscular exercise when the patient was reclining.

Revue Medicale du Canada (Montreal), October 16.

Anilin in Treatment of Tuberculosis.—The thesis of Eva Abramovitch (Montpellier) proclaims the efficacy of pure anilin by inhalation as a disinfectant of the lungs. She first discovered its therapeutic properties by the error of a druggist, who gave her a bottle of crude anilin when she applied for a balsam. She relates that she was yellow, green and blue in turn, but at the end of three weeks her cough was entirely cured. After numerous tests and experiences, she announces that redistilled, pure anilin is perfectly harmless, and is absolutely destructive to Koch's bacillus. Inhaled into the lungs it induces active hyperleucocytosis; the character of the sputa in pulmonary tuberculosis rapidly changes and all expectoration finally ceases, while the patients rapidly gain in weight. There is no danger from its use for the heart, nervous system nor kidneys, when they are intact, and even in pathologic conditions or when an over-dose has been taken, the disturbances are transient. She recommends for inhalation a 25 per cent. solution of freshly redistilled anilin in a saturated solution of boric acid to which a little menthol has been added, gradually increasing the proportion of the anilin. The inhalations should be repeated twenty-five to thirty times every half-hour, and the treatment kept up long after all stethoscopic signs have vanished, in order to prevent recurrence. The anilin can also be applied in inunctions or may be administered by the mouth.

Formalin Test for Albumin in the Urine. TRETROP.—The physician can carry with him a small vial of formalin as it is not a corrosive, and can test the urine at the bedside. Four or five cubic centimeters of fresh urine are heated in a test tube nearly to boiling point, and a few drops of 40 per cent. formalin are added after it is removed from the flame. If there is any albumin in the urine it coagulates like the white of an egg, and accumulates on the surface of the urine and also settles on the walls of the tube. After pouring off the fluid, the proportion of albumin can be determined by weighing or by the size of the coagulum left.

Semaine Medicale (Paris), October 9.

Associated Epidemics. V. BABES.—Epidemics of certain complications of diseases are sometimes observed in hospitals. The ordinary pyogenic micro-organisms seem to acquire unusual virulence from some reason, and attack inmates of hospitals debilitated by their previous affection. Babes has described several extensive epidemics of this kind. In the present communication he reports an epidemic of forty cases occurring in two rag-pickers' communities, which presented the clinical picture of exanthematous typhoid fever. But neither during life nor at the autopsy was it possible to discover any typhoid bacilli nor typhoid lesions, although the serum reaction was pronounced in most cases. The influenza bacillus was found numerous in the eight cases that came to autopsy. The disease could not have been an aborted typhoid fever, as the agglutinating reaction in several was absent at first and became positive only later. Neither could it have been simple grippe, as the grippe bacillus was not always found at first, but appeared later, and it was found in old lesions, pneumonic, softening or gangrenous foci. The evidence seemed to indicate that in this epidemic there was some hidden factor, some primary infection of which it was impossible to detect the causal agent, and that the influenza and possibly also the typhoid bacillus were secondary arrivals, and that the latter for some reason was unable to thrive and produce its usual lesions. Possibly there may have been no specific primary infection but merely a peculiar lack of resisting power on the part of the poorly-fed subjects due to their unhygienic environment, close to the city dumping grounds in clay-pits. This lack of resistance on the part of the organism may have allowed the ordinary microbes, streptococci and others, to prepare the soil for the invasion of the influenza or typhoid bacilli. In any event, study of this epidemic at Bucharest last winter proves that the discovery of the influenza bacillus does not necessarily indicate an epidemic of grippe, nor do the positive results of the agglutinating test demonstrate that typhoid fever is epidemic. Both of these elements of diagnosis may be found in the evolution of a special syndrome—an associated epidemic—which yet is neither la grippe nor yet typhoid fever. It also proves that every epidemic is not inevitably produced by a single specific microbe, but that certain associated epidemic diseases may occur, induced by ordinary causes on a predisposed soil, by associated factors, or by specific germs grafted on other equally specific infectious diseases, undetermined as yet. In the associated epidemic described, the primary affection probably differed in different patients. In the majority the fundamental disease seemed to be typhoid fever, but in two of the patients it seemed to have been measles, in another, general infection by the pneumococcus, streptococcus and staphylococcus, and in another, arteriosclerosis evidently aggravated by the invasion of the grippe bacilli which were found numerous in every case.

Berliner Klin. Wochenschrift, September 30.

Splashing in the Stomach a Sign of Atony. B. STILLER.—Pure atony of the stomach is not necessarily accompanied by

muscular insufficiency. The motor function of the stomach is twofold, a concentric contraction and the peristalsis for evacuating its contents. Atony is defective concentric contraction, and muscular insufficiency is defective peristalsis. The former may exist alone, but it predisposes to the latter, and the expelling power may vary with the time, the length and the quality of the meal and even with the mood. But at any time during digestion the splashing sound can be elicited, revealing the underlying atony. It is usually merely one manifestation of a congenital atony of the entire organism, entailing enteroptosis, nervous dyspepsia and general neurasthenia. Stiller suggests the term congenital universal asthenia as descriptive of this specific and extraordinarily frequent condition. The first and most constant sign is the splashing sound in the stomach, which reveals the atony of the organ, and when supplemented by the changes in resonance in different positions, renders further investigation with the sound superfluous.

Apparent and Actual Disease Foci. BUTTERSACK.—The incubation, localization and other features of infectious diseases are best explained, Buttersack thinks, by the assumption that the germs first find their way into some lymph gland or glands. They may remain latent in these foci for days or years, but when they finally surmount these barriers, the lymph channels afford an easy means of conveyance by which they invade the entire organism and settle at the points for which they have a special predilection or which are the least effectively protected by the resisting forces of the organism.

Treatment of Continuous Flow of Gastric Juice. L. V. ALDOR.—In the five cases of gastrosuccorrhea which Aldor describes, the symptoms—pains in the stomach, excessive thirst, obstinate constipation and frequent vomiting—were so severe that malignant disease was suspected. The condition was finally differentiated by the large amounts of gastric juice found in the stomach at all times, the low specific gravity of the stomach contents, the large proportion of uncombined hydrochloric acid and the defective digestion of starch, with the positive exclusion of motor insufficiency of the stomach. The subjective symptoms frequently subsided but the objective persisted unchanged. Only one case is known in which this excessive secretion of gastric juice was unaccompanied by any symptoms. Belladonna has a strong inhibiting action on the secretion of gastric juice, and atropin is the only drug at our disposal with which gastrosuccorrhea can be influenced. It should be supplemented by an alkaline saline water taken before and after every meal, as hot as the patient can bear. By this means the gastric juice is neutralized and a sedative action obtained, while the results are equivalent to a rinsing out of the stomach. One or two teaspoonfuls of Carlsbad salts taken during the day are also useful. Lavage of the stomach will seldom be found necessary with this treatment. Even when the symptoms are most severe, a single lavage in the morning will be found sufficient. Starchy foods should be avoided. The systematic and abundant ingestion of fats not only supplies the required calories in a non-nitrogenized form, but modifies the secretion of gastric juice.

Centralblatt f. Bakteriologie (Jena), September 10.

Insects as a Living Culture Medium for Germs of Contagious Diseases of Man and Animals and for Experimental Research. C. VON HOLUB.—For two years Holub, of Odessa, has been experimenting with insects, inoculating them with ulcus molle, syphilis, etc., or infecting them by feeding them on substances contaminated with the fluids from soft chancre. In every instance he found that the entire body of the insect offered a pure culture of the specific microbe. He did not have a single failure in 1000 experiments. The insects were of numerous varieties, orthoptera, rhynchota, hemiptera, coleoptera, lipidoptera and diptera, from grasshoppers and bugs of numerous kinds to beetles, butterflies and flies. Most of his tests were with ulcus molle, and although other bacteria were sometimes present in the fluid inoculated, only pure cultures of the typical streptobacillus developed, and its virulence was enhanced. The infected insects lived twenty-one days as the maximum, if fed, and only fourteen days if not fed. The development of the microbe was evident in twelve hours. The inoculations were made with a fine needle in the heart or throat. An infected insect invariably infected in turn its sound mate, although great care was always taken to make the inoculations as far as possible from the genitalia and digestive organs. Flies fed on the exudate from a case of soft chancre soon swarmed with the specific bacillus in pure cultures. One infected insect always transmitted the infection to others in the same jar. Although ulcus molle is an external disease in man it developed internally in the insects without apparent external manifestations.

Centralblatt f. Chirurgie (Leipsic), October 5.

Heteroplastic Operation for Congenital Dislocation of Hip Joint. O. WITZEL.—The object of the operation described was to supply a support for the head of the femur, as the existing socket was too shallow to hold it. A row of gold-plated nails was driven into the bone just above the acetabulum, forming a strong barricade by the close juxtaposition of the rounded heads of the nails set in a semicircle. The child of 4 first operated on, had a left dislocation with congenital shallowness of the socket. A plaster case was applied to the entire limb, including the foot, during narcosis, with vigorous extension. After several days of assurance that the cast fitted well and was comfortable, a window was cut in it over the hip joint, and the exposed skin was scrubbed and painted with iodin. A large sterilized sheet was then spread over the child, a slit cut in it over the hip, and the edges of the slit fastened to the skin with forceps just inside the edges of the opening in the cast. The soft parts were then incised down to the fascia, the incision carried 8 cm. on a straight line slanting across the upper portion of the great trochanter. The soft parts were then drawn up out of the way, and after preliminary location of the head, etc., by needle puncture, five or six nails were driven into the bone in a semicircle around the head, forming a fence to keep it in place, the rounded heads of the nails corresponding to the neck. As the pelvic walls are unusually thick in congenital dislocations of this kind, the nails were driven in for 2 cm., the outside ones slightly slanting to prevent any injury to the sciatic nerve. They were 3 mm. in diameter, about 4 cm. long and the points were nearly blunt. A short, thick stick with a depression in the lower end to fit over the head of the nail, was used between the hammer and the nail to prevent injury to the soft parts. The cutaneous incision was sutured with fine silver wire; it lies considerably below the semicircular fence of nails. The effect of this procedure does not seem to differ from that of any ordinary bloodless, manipulative reduction. The nails fully answer their purpose and will in time probably aid in the formation of a bony limbus.

October 12.

Cause of Phlegmons After Amputation of Fingers. C. LAUENSTEIN.—The tendons are usually pulled out in amputating and when the stumps retract, they carry back with them, far into their sheath, the germs of infection. In time a phlegmon develops, which could have been avoided by amputating the tendons without making traction on them.

Centralblatt f. d. Grenzgeb. d. Med. u. Chir. (Jena), October 2.

Tuberculosis of the Bladder. K. R. VON HOFMANN.—This was formerly considered a rare affection, but Hofmann has been able to collect ninety-four communications on the subject that have been published since 1895. Men are more frequently affected, and in adults there is usually a primary focus elsewhere, generally in the kidneys or genitalia. In children, tuberculosis of the bladder is generally primary. Gonorrhea seems to induce a predisposition on the part of the bladder equivalent to trauma. The lesions are mostly small and cluster around the ureteral orifices, but a few cases of general ulceration are on record. Perforation has occurred into the rectum, and one fatal case has been reported in which the bladder perforated into a persisting urachus. In adults, the symptoms are, as a rule, an immoderately frequent desire to urinate, pain, pyuria and hematuria, but in children, the first, principal, and sometimes the only, symptom is incontinence of urine,

with or without pyuria. Instances have been known in which a primary tuberculous cystitis had developed and progressed in a child without causing any symptoms referable to the bladder. The urine is always acid at first, but as the disease progresses and mixed infection is superposed, it gives an alkaline reaction. A tuberculous process anywhere in the urogenital tract favors secondary infection, and the symptoms induced by the latter first attract attention to the primary process. The hematuria usually is slight and appears with the last few drops of urine. Immoderately frequent micturition is soon accompanied by pain, or existing pain may become aggravated. Suspicion of tuberculosis is usually a contraindication to cystoscopy, and the diagnosis must be based on bacteriological examination which is rendered difficult by the resemblance between the tubercle and smegma bacilli. Hesse's culture medium, originally designed for the sputum, differentiates the bacilli better perhaps than any other means. This is a combination of 5 parts Heyden's "Naehrstoff"—a soluble albumin, in its properties midway between coagulated albumin and somatose—5 parts sodium chlorid; 30 parts of glycerin, 10 of agar; 5 of a 28.6 per cent. solution of sodium, and 1000 of distilled water. The smegma bacillus will not grow on this medium. Remissions are sometimes noted in the course of tuberculosis of the bladder, and the affection may have a protracted course of fifteen to twenty years. Complete recovery is not so unusual as is generally assumed, especially in case of primary affection. Treatment is the same as for tuberculosis in general. Goldberg and Richter report cases which remarkably improved under internal administration of ten to seventy drops of a mixture of equal parts of ichthyol and distilled water three times a day in increasing doses. In one case a patient took twenty-five to seventy drops for months without disturbing the digestive apparatus, and with remarkable improvement of the bladder and kidney tuberculosis. Botswood, Chetwood and others recommend nuclein and report satisfactory results. In one case, a tubercular affection of the bladder which had lasted eighteen months, was treated by subcutaneous injections of nuclein for two months and then a 5 per cent. solution was administered by the mouth, with complete recovery of the patient. Bazy and others recommend what they call "the permanent dressing" for the bladder, i. e., injections of 20 to 30 c.c. of a 5 per cent. emulsion of iodoform in fluid vaselin. It is injected into the empty bladder and as soon as the vaselin appears in the urine during micturition further urination is suspended for the time. By this means the emulsion can be kept in the bladder for several days. Janin adds 5 per cent. guaiacol to the mixture. Ramond has reported excellent results from distention of the bladder with air, and Battle with water, but their successes have not been confirmed by others to date. Several writers announce recoveries after cauterizing or curetting the bladder, especially in women. Camero reports 5 permanently cured, 5 temporarily improved and 4 failures out of 14 cases thus treated by curetting; Guyon 8, very much improved and 1 failure in 9 cases. The former calls attention to the necessity of treating the urethra at the same time. The French regard operative interference as merely palliative, but others have secured excellent results with it. Sectio alta is preferable, even for women. Sectio mediana may exceptionally render service as in a case reported by Greiffenhagen in which a caseous perineal abscess had perforated into the urethra, with simultaneous tuberculosis of the bladder, testicles and urethra. Five weeks' drainage of the bladder through the wound in the perineum, followed by the use of the permanent catheter for four weeks, cured the patient, and the cure had persisted a year to the date of publication.—*Deutsche Ztft. f. Chir.*, 1896.

Muenchener Med. Wochenschrift, September 10.

Simplified Intubation. A. RAHN.—No special skill or experience is required for intubation with the tube as modified by Rahn. The family doctor can insert and remove it without the least difficulty or danger. The shape is altered to allow the portion opposite the thyroid cartilage to be smaller in diameter than the rest, while the tube at the lower end is more olive-shaped, and at the upper end flares more like a funnel, the edge sloping downward from the back. Not far from the top a metal hook projects inside the tube about half across its diameter. The tube is inserted by an instrument similar to Krause's "universal loop," with a metal sheath over the wire loop which by a screw can be made to project as far as may be desired. The loop is hitched over the hook in the top of the tube and screwed fast to it. The tube can thus be inserted in the throat as if solidly fastened to a long handle. The child should lie on the bed. One assistant holds the head and gag, another the hands folded on the breast and the feet. The physician holds down the tongue with the left forefinger, and with it also pushes the epiglottis aside. The tube is then inserted with ease. It can be taken out with equal facility, the wire loop catches on the hook, and is then screwed fast to the tube. If strings are used two or three knots should be tied in them close to the tube so that they can be more readily found.

Wiener Klin. Wochenschrift, October 10.

The Spinal Cord in Children and Syringomyelia. J. ZAPPERT.—Schultze has described hemorrhages in the posterior horns discovered in the spinal cords of two infants after difficult delivery. Pfeiffer has also reported a similar case and Zappert now reports another. Schultze's swinging had not been applied in two of these cases, and consequently can not be incriminated in the production of the hemorrhages. It is more than probable that these hemorrhages resulting from traction during delivery, may entail such injury on the surrounding cells that they may prove the foundation on which syringomyelia develops later. But this can not be a frequent cause of the affection, as only four instances are known and Zappert discovered these hemorrhages only once in his research on 200 spinal cords from embryos and infants newly born and up to two years of age. He urges others to inquire if delivery had been especially difficult in the cases of syringomyelia that come under observation. He found many anomalies in the size and shape of the central canal, but does not consider them pathologic in most cases, especially what he calls simple hydromyelia, i. e., an enlargement of the central canal to the rear, tapering into a point and forcing the gray commissure before it into the posterior septum. There is always the possibility, however, that this simple hydromyelia may develop later into cavities, and possibly be accompanied by proliferation of the neuroglia. He was able to discover an advanced phase of this combination in the spinal cord of a 19-months' rachitic infant who had died from bronchitis. The central canal was abnormally large and surrounded by proliferated glia, indicating that the child in time might have had syringomyelia. In the case of one anencephalous infant who died soon after delivery at term, the central canal was enormously large and double in some parts—an evidently pathologic congenital hydromyelia. It was the only spinal cord of the entire number investigated in which the enlargement of the central canal was, as in syringomyelia, most pronounced in the region of the neck. No positive evidences were found in any case of congenital proliferation of neuroglia.

Defective Development of the Kidneys in Congenital Lues. A. STOERK.—Microscopic study of the finer structure of the kidneys during the last months of fetal existence or the first months of life, showed constant vegetative disturbances, pathologic defective development, under the influence of the hereditary deleterious influence. The disturbances were invariably of the same nature in the twenty cases examined and were never found in the sixty control kidneys examined except in two in which inherited syphilis was not absolutely to be excluded.

Alteration in the Pancreas in Case of Diabetes. A. WEICHSELBAUM.—The atrophy invariably noted in the writer's experience in cases of "pancreas diabetes," involved the parenchyma and essentially the cells of Langerhans. If this finding is confirmed by others, it sustains the assumption that these "islands" are vascular glands and that they produce the substance which prevents the retention of sugar in the blood. The unusual abundance of the centro-acinar cells possibly indicates increased function of the organ, a secondary phenomenon en-

tailed by the diabetes. The numbers of granules of fat in the epithelium is possibly also merely a secondary phenomenon resulting from the increased metabolism in diabetes. The age of the eighteen diabetics in whom the pancreas was examined almost immediately after death, ranged from 14 to 75, and the diabetes had lasted from three weeks to nineteen years. All had died in coma. In the only case in which the pancreas failed to show marked macroscopic and microscopic atrophy of the parenchyma, a large glioma was found in the cerebrum. In one case the pancreas was completely indurated and inflammation had evidently preceded the induration. Investigation of the pancreas in cases of other affections showed marked atrophy of the parenchyma, but the centro-acinar cells of Langerhans were spared. Weichselbaum, therefore, is inclined to consider the atrophy of these islands, the characteristic token of diabetes.

Metastatic Ophthalmia in Epidemic Cerebrospinal Meningitis. WINTERSTEINER.—The autopsy disclosed a suppurative pericarditis, an abscess in the thyroid cartilage, numerous subcutaneous hemorrhages and a sacral decubitus. The staphylococcus was found in the pus from the pericardium, but Weichselbaum's intracellular meningitis micrococcus was discovered pure in the suppurative ophthalmia. The optic nerve was sterile.

Friedlaender's Bacillus in a Cerebral Abscess. M. SACHS. Sachs reports the second case on record in which pure cultures of Friedlaender's pneumonia bacillus were derived from an abscess in the brain. In both cases there was coexisting suppuration of the middle ear, which was probably the primary process.

Zeitschrift f. Hyg. u. Infectionskr. (Leipsic), xxxviii, 1.

Penetration of Bacteria into the Lungs. O. NENNINGER.—The experimental research described shows that dust and droplets containing bacteria penetrate to the terminal ramifications of the air passages. Droplets seem to have a greater penetrating force than dry dust. As the lung is in constant communication with the exterior it is not always sterile, but can be found so under favorable conditions. The lung is not a good shelter for microbes and they rapidly disappear from it. No trace of the anthrax bacilli introduced, for instance, in some of the experiments, could be discovered in the lung twelve hours later. The same mechanism which separates and expels droplets in expiration, separates and causes them to be inhaled during inspiration and carried to the remotest air passages. The constant movements of the muscles engaged in speaking, chewing, swallowing and breathing also aid in detaching droplets from the fluids in the mouth and throat. Nenninger compares the germs thus derived to a spark glimmering in the ashes. A conflagration may result at any moment and infection may suddenly flare up in the lung from aspiration of the germs casually finding their way into the mouth, throat and upper air passages.

Zeitschrift f. Orthop. Chir. (Stuttgart), Ix, 3.

Report from Hoeftman's Clinic. STRUBE.—In advanced cases of scoliosis Hoeftman supplements continuous extension on a sloping plane, by Weir Mitchell's method of feeding. The general health rapidly improves in most cases and the patient is then ready for active gymnastic treatment. Among the points emphasized in this profusely illustrated communication are the advantages to be derived from massage in cases of irreducible hernia with adhesions, even of many years' duration. The hernia is taken in both hands and gently pulled outward, with rotating movements. An assistant at the same time pushes the intestines away from the spot inside, with his palm applied to the abdomen below. By this traction in both directions, the adhesions are gradually loosened, and after a few repetitions of the massage, the hernia is easily reduced.

Treatment of Curvature of the Spine. W. Schulthess.—An apparatus on the principle of a standing swing is proving very successful in Schulthess' Orthopedic Institute at Zurich. The trunk is fastened in extension, the arms raised, with spring pads working on the projecting shoulder or back, while the patient stands in a swing which moves on an axis on a level with the deformity to be corrected. An adjustable heavy weight on a long bar at right angles to the swing, travels with it. Schulthess calls this apparatus the "hip pendulum and shoulder pulling and pushing apparatus."

Progressive, Multiple, Ossifying Myositis. W. RAGER.—Microdactylia was noted in 24 of the 54 cases of this affection that have been published. No treatment has any effect, and death finally occurs from the interference with respiration and mastication, but long survival is possible, as the disease runs a very erratic course. It always commences in childhood. In the new case described, the child was apparently healthy except for the deformity in thumbs and big toes. Between the age of 1 and 2 some transient bony tumors were noticed in the forehead. Two years later another appeared in the neck, until gradually most of the voluntary muscles contained these bony tumors, completely suspending their function. The process is first an asymmetrical, local, doughy, edematous tumor, increasing in size for a few days, with pain and sometimes slight fever. The tumor then subsides somewhat, but gradually becomes harder and harder. The lesions became more numerous in this case at puberty. The internal organs seemed to be intact. The parents and other children were healthy.

Iatrike Procdcs (Syra, Greece), May-June.

Malarial Psychic Troubles. J. KARDAMATIS.—The nervous disturbances observed in the course of malarial infection are caused by the toxins secreted rather than by the malarial parasite itself. They are usually most pronounced in persons of a neuropathic tendency, and the infection may arouse a morbid predisposition or a latent local or general affection, or it may aggravate an existing disease. The delirium is similar to that of other infectious diseases and the malarial drunkenness like that of alcohol, with the four degrees of agitation, anesthesia, coma and paralysis. Malarial delirium may be subacute, acute or superacute and even acute mania has been observed, but is rare. In the delirium the patient is in a dream from the irritation of the centers of special sensibility, and the delirium is induced by the hallucinations. Psychic troubles are rare in the course of chronic paludism, while those which have been published as first appearing long after recovery from the malarial infection, are dubious from more than one point of view.

Gazzetta Degli Ospedali (Milan), September 29.

Chronic Peritonitis. R. SUPINO.—The aim in treatment of subacute and chronic peritonitis should be to increase the resisting powers of the organism by dietetic and hygienic measures, supplemented by small doses of iron and arsenic. Supino thinks that operation is unnecessary, as spontaneous recoveries occur without it. He combats the ascites by the local application of tincture of iodin. In case of a scrofulous, lymphatic tendency, he has been very successful with daily subcutaneous injections of the iodo-iodid solution recommended by Durante. His experience at the Pisa "Ospizio Marino" has included numbers of cases of "actual resurrections" which he ascribes to the benefits of the sea air, although the institution has no facilities for bathing in warmed sea water, which he thinks would be of immeasurable advantage in such cases. He also recommends the seashore in the winter as preferable in that climate, to the summer.

Physiopathology of the Suprarenal Capsules. G. LUCIBELLI.—Animals deprived of both suprarenal capsules rapidly succumbed, but after extirpation of one capsule, the animals continued to increase in weight with no disturbance in any function. Lucibelli also found that rabbits supported infection better after the removal of one capsule than before—the animals survived an infection to which all the control intact animals succumbed. When the infection was so severe as to be necessarily fatal, the animals with one capsule survived considerably longer than the intact animals. The exaggerated protective function displayed by the one remaining capsule was explained by the marked increase in size of the capsule left, and

its histologic alterations. Hyperplasia of the young cells was evident and augmented nutrition by the circulation in the cortical and medullary substance. Experiments with microorganisms inoculated into one capsule showed that the other capsule, under these circumstances, had no power to modify or conquer the resulting infection.

Lo Sperimentale (Florence) lv, 3.

Influence of Mechanical Causes on Development of Bones. G. BANCHI.—The results of an interesting series of experiments on animals indicate that the functioning of the muscles is an important factor in the development and shaping of the bones, on account of the mechanical irritation caused by their contractions.

Rhinoscleroma. U. MANTEGAZZA.—The inefficacy of treatment or surgical intervention in case of rhinoscleroma, suggests the advisability of trying serum treatment. Mantegazza's experimental research reported in this communication, confirms the specific action of the bacillus discovered by Frisch, as the causal agent of rhinoscleroma, thus providing a base for the production of an effective serum.

Queries and Minor Notes.

MEDICAL PRACTICE ACTS.

PALMERSTON, ONT., Oct. 30, 1901.

To the Editor:—Please answer in THE JOURNAL the following queries and greatly oblige: 1. What are the fees for license in Nebraska; when and where are the examinations held? 2. What are the fees for license in Michigan; when and where are the examinations held? 3. Where is Oak Park, a suburb of Chicago, situated with relation to the city proper? What is its population?

W. R.

ANS.—In Nebraska the fee for registration is $10. The board meets on the first Tuesday of each month at the Capitol Building, Lincoln. In Michigan the fee for examination is $10. Regular meetings of boards are held at Lansing on the second Tuesdays of June and October, each year. Application should be made at least two weeks before to the secretary, Dr. B. D. Harison, Sault Ste. Marie. Oak Park is directly west of Chicago, and is practically a continuation of its suburb wards, though not included. It is the largest village in Cicero TOWNSHIP; the population of the township was 16,310 in 1900.

PHARMACY AND MEDICAL LAWS.

CLEVELAND, OHIO, Oct. 28, 1901.

To the Editor:—Will you please inform me through THE JOURNAL to whom I should write to procure copies of the pharmacy and medical laws of the States of Arkansas and Colorado? C. H. G.

ANS.—Write to the Secretaries of State, Little Rock and Denver.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Oct. 17 to 23, 1901, inclusive:

Edward T. Comegys, major and surgeon, U. S. A., member of a board at Fort Meade, S. D., to determine the fitness of officers for promotion.

William M. Gray, major and surgeon, U. S. A., leave of absence extended.

Thomas G. Holmes, contract surgeon, relieved from duty as transport surgeon of the transport *Grant*, and on the expiry of his present leave of absence will proceed from Detroit, Mich., to Fort Walla Walla, Wash., for post duty.

Frank P. Kenyon, captain and asst.-surgeon, Vols., having tendered his resignation, is honorably discharged from the service of the United States, to take effect from this date, Oct. 23, 1901.

William F. Lewis, captain and asst.-surgeon, U. S. A., from Fort Leavenworth, Kan., to duty at Fort D. A. Russell, Wyo.

Irving W. Rand, captain and asst.-surgeon, U. S. A., leave of absence granted.

Alexander N. Stark, captain and asst.-surgeon, U. S. A., now on duty at Fort McHenry, Md., will proceed to Fort Monroe, Va., for temporary duty, October 21; also member of examining boards at Fort Monroe, Va., vice First Lieutenant Matthew A. De Laney, asst.-surgeon, U. S. A., relieved.

William A. Summerall, captain and asst.-surgeon, Vols., leave of absence granted.

Benjamin L. Ten Eyck, captain and asst.-surgeon, U. S. A., leave of absence on certificates of disability extended.

Samuel M. Waterhouse, lieutenant and asst.-surgeon, U. S. A., member of a board at Fort Meade, S. D., to determine the fitness of officers for promotion.

Henry E. Wetherill, lieutenant and asst.-surgeon, U. S. A., having been found incapacitated for active service on account of disability, which is not the result of any incident of service, is wholly retired, to take effect Oct. 16, 1901.

Eugene R. Whitmore, lieutenant and asst.-surgeon, U. S. A., member of an examining board at Fort Sheridan, Ill., during the temporary absence of Major Francis J. Ives, surgeon, U. S. A.

Appointments, Promotions, Retirements, Etc.,

of Army Medical Officers, recorded in the Adjutant-General's Office, between Aug. 15 and Oct. 15, 1901. Previous notices of this character were published in THE JOURNAL of Sept. 7, 1901. During the month ending September 15, the only changes recorded were the promotion of two regular medical officers to be surgeons, with the rank of major: Captain Eugene L. Swift, asst.-surgeon, dating from May 7, 1901, and Captain Paul Shillock, asst.-surgeon, dating from June 7, 1901.

During the month ending October 15, there were:

Regular Army, Appointments.—To be assistant-surgeons, with the rank of first lieutenant: Wilson T. Davidson, of New York, Sept. 5, 1901; George H. Crabtree, of Illinois, Sept. 5, 1901; George H. Richardson, of Pennsylvania, Sept. 9, 1901; Herbert M. Smith, of Virginia, Sept. 20, 1901; Evan P. Howell, of Georgia, Sept. 21, 1901, and Cosam J. Bartlett, of California, Sept. 21, 1901.

Volunteers, Honorably Discharged.—Captain Frederick H. Morhart, asst.-surgeon, Sept. 30, 1901, and Captain Meyer Herman, asst.-surgeon, Oct. 8, 1901.

Killed in Action.—Major Richard H. Griswold, surgeon, Sept. 28, 1901, at Balangiga, Samar, P. I.

Navy Changes.

Changes in the Medical Corps of the Navy, week ending Oct. 26, 1901:

Surgeon J. M. Edgar, ordered to the *Wabash*, October 23, as relief of Surgeon H. G. Beyer.

Surgeon H. G. Beyer, detached from the *Wabash*, upon reporting of relief, and ordered to the *Prairie*, when put into commission.

Asst.-Surgeon R. T. Atkinson, detached from the *Wabash*, October 30, and ordered to the *Prairie* when put into commission.

Asst.-Surgeon B. B. Kerr, ordered to the *Wabash*, October 28.

Asst.-Surgeon E. Thompson, ordered to the Naval Hospital, Boston, Mass., October 26.

Surgeon G. Pickrell, detached from the *Columbia*, upon reporting of relief, and ordered to the Naval Dispensary, Washington, D. C.

Surgeon P. Leach, ordered to the *Columbia*, as relief of Surgeon G. Pickrell.

P. A. Surgeon R. M. Kennedy, ordered to the *Franklin*.

Asst.-Surgeon A. G. Grunwell, ordered to the Naval Hospital, Norfolk, Va., November 1.

Asst.-Surgeon L. W. Bishop, ordered to the *Independence*.

Pharmacist H. Henry, detached from the *Independence* and ordered to the Bureau of Medicine and Surgery, Navy Department.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Oct. 26, 1901:

SMALLPOX—UNITED STATES.

California: San Francisco, Oct. 6-13, 3 cases, 1 death.
Kentucky: Lexington, Oct. 12-19, 2 cases.
Louisiana: New Orleans, Oct. 12-19, 5 cases.
Massachusetts: Boston, Oct. 12-19, 18 cases, 2 deaths.
Nebraska: Omaha, Oct. 6-19, 6 cases.
New Hampshire: Concord, Oct. 6-12, 1 case, 1 death.
New Jersey: Camden, Oct. 12-19, 6 cases.
New York: Oct. 12-19, Elmira, 6 cases; New York, 4 cases, 1 death.
Pennsylvania: Norristown, Oct. 12-19, 1 case; Philadelphia, Oct. 12-19, 69 cases, 10 deaths; Pittsburg, Oct. 12-19, 1 case; Steelton, Oct. 13-20, 1 case.
Rhode Island: Newport, Oct. 12-19, 1 case.
Utah: Salt Lake City, Oct. 12-19, 1 case.
Vermont: Burlington, Oct. 12-19, 15 cases.

SMALLPOX—FOREIGN.

Austria: Prague, Sept. 28-Oct. 5, 4 cases.
Belgium: Brussels, Sept. 28-Oct. 5, 1 death.
Colombia: Cartagena, Sept. 23-29, 1 death; Panama, Oct. 7-14, 125 cases.
France: Paris, Oct. 5-11, 6 deaths.
Great Britain: London, Sept. 28-Oct. 5, 169 cases, 7 deaths; Southampton, Sept. 28-Oct. 5, 1 case.
India: Calcutta, Sept. 7-14, 2 deaths; Madras, Sept. 7-13, 2 deaths.
Mexico: Mexico, Sept. 29-Oct. 6, 2 cases.
Nova Scotia: Halifax, Oct. 6-12, 20 cases.
Russia: Moscow, Sept. 14-28, 5 cases, 1 death; Odessa, Sept. 28-Oct. 5, 2 cases; Warsaw, Sept. 14-21, 1 death.
Spain: Madrid, July 15-Sept. 9, 26 deaths.
Uruguay: Montevideo, Aug. 16-24, 22 cases, 2 deaths.

PLAGUE—UNITED STATES.

California: San Francisco, Oct. 6-13, 1 case, 1 death.

PLAGUE—INSULAR.

Philippines: Manila, Aug. 18-Sept. 7, 13 deaths.

PLAGUE—FOREIGN.

China: Hongkong, Aug. 31-Sept. 7, 6 cases, 6 deaths; Newchwang or Newchang, Aug. 31, 2 cases.
India: Bombay, Sept. 10-17, 250 deaths; Calcutta, Sept. 7-14, 18 deaths; Karachi, Sept. 8-16, 18 cases, 13 deaths.

YELLOW FEVER.

Costa Rica: Port Limon, Oct. 5-12, 2 cases, 1 death.
Mexico: Merida, Sept. 21-28, 3 deaths; Valladolid, Sept. 21-28, 4 deaths; Vera Cruz, Sept. 28-Oct. 5, 7 cases, 4 deaths.

CHOLERA.

India: Bombay, Sept. 10-17, 11 deaths; Calcutta, Sept. 7-14, 8 deaths; Madras, Sept. 7-13, 113 deaths.
Java: Batavia, Aug. 31-Sept. 7, 80 cases, 68 deaths.